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AUTHOR Steeves, H. Leslie
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ABSTRACT

Four coorientation variables--congruency, accuracy, agreement, and feelings of being understood--were examined after each of 15 meetings of a discussion group composed of 12 graduate students in education. It was hypothesized that group members' accuracy and agreement regarding salient group issues would increase over time, and that congruency and feelings of being understood would begin at a relatively high level, decrease in early sessions, then increase throughout remaining sessions. Trend analysis revealed trends similar to those predicted, but the small amount of variance accounted for by the trends and a qualitative examination of group events suggested an impact of variables other than time spent communicating on coorientation change. Accuracy began low and increased somewhat linearly throughout the semester. Congruency began relatively high, dropped quickly, increased steadily, and then decreased at the end of the semester. The trend in feelings of being understood was difficult to interpret, probably due to the measure's relative abstractness. Analyses of the dependent variable accuracy revealed the unexpected finding that agreement accounted for about 7% of the variance, while "session" (time), congruency, and feelings of being understood accounted for less than 1% each, thereby implying that early agreement/disagreement may affect later accuracy/inaccuracy. (RL)

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COORIENTATION TIME TRENDS IN A SMALL GROUP

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by

H. Leslie Steeves
School of Journalism and Mass Communication
University of Iowa, Iowa City, Iowa 52242

CS 503574

INTRODUCTION

When McLeod and Chaffee (1973) set forth general postulates of the coorientation strategy, they stressed the importance of taking measures at several (at least four) points in time. Yet few studies since then have followed this advice. Thus, based on results for two points in time, many researchers have concluded that coorientational accuracy increases with more communication.

In addition, it has recently been suggested (e.g. Pavitt and Capella, 1979) that most person perception and coorientation studies to date have ignored the likely impact of situational factors on accuracy. Since such factors could emerge and recede at different times in the communication process, the implication is that multiple coorientation measures could reflect situational influences.

This exploratory study aimed to begin examining this issue by measuring four coorientation variables --agreement, accuracy and congruency (e.g., McLeod and Chaffee, 1972) and feelings-of-being-understood (Laing et al, 1966)-- at multiple points in time.

Although most coorientation studies involve dyads, it seems reasonable to assume that people are influenced by their perceptions of groups to which they belong as well as by their perceptions of their dyad partners. Thus, it was decided here to extend the coorientation model to the study of small groups as illustrated in Figure 1.

The four hypotheses tested (listed below) were based on previous research and theorizing.

H_1: Member congruency regarding salient group issues will begin relatively high (1st of 15 group sessions), decrease in early (2nd-3rd) sessions, and then increase throughout remaining sessions.

H_2: Member-group accuracy regarding salient group issues will begin relatively low and increase throughout subsequent sessions.

H_3: Member-group agreement regarding salient group issues will begin relatively low and increase (though not as fast as accuracy) throughout subsequent sessions.

H_4: Member feelings-of-being-understood regarding salient group issues will begin relatively high, decrease in early sessions, and then increase throughout remaining sessions.

These hypothesized trends seemed essentially consistent with models of group development and also with much dyadic and available group coorientation research to date. However. the author also located substantial coorientation and group dynamics literature suggesting deviations from hypothesized trends. These three areas--

group development models, coorientation research and group dynamics research -- will each be discussed separately.

Models of group development. Hypothesized increases in agreement and/or accuracy are consistent with most models of group problem-solving or decision-making development.

For example, Bales' (1951) three-phase group development model (orientation-evaluation-control) and Tuckman's (1965) four-phase model ("forming-storming-normining-performing") clearly assume agreement as the ultimate communication goal in their emphases on solution-emergence as an important characteristic of the last step.

Crowell and Scheidel (1961), Scheidel and Crowell (1964) and Fisher (1970a and b), among others, elaborated the group development goal to implicitly include accuracy as well as agreement -- or consensus, as demonstrated in the culumative development of ideas and ever-increasing unity of action.

Of course, most "prescriptive" approaches to group development[1] (usually applications of individual decision-making models to small groups) assume that the goal of group communication is agreement and/or consensus on a problem-solution and are therefore also consistent with hypothesized increases in agreement and accuracy.

Most psychoanalytic theories of group development are also in line with predictions for agreement and accuracy, but their consistency with predicted initial highs and lows of congruency and feelings-of-being-understood is particularly striking.

Beginning with Freud (1921) psychoanalytic theorists have tended to conceptualize group development in terms of individual psychosexual stages.[2] The assumption is that members initially regress to some degree -- to reenact egocentric, self-serving behaviors of early childhood, symbolicly (and "unconsciously") reexperiencing and acting out frustrations from thwarted desires. Following this initial regression, members are assumed to collectively recapitulate remaining developmental stages. This process is elaborated and logically defended by Tucker (1973) and by Saravay (1978).

There researchers' and theorists' descriptions of members' egocentrism and inability to discuss abstract issues in newly formed (regressed) groups seems likely to be associated with initially high congruency and feelings-of-being-understood. In other words, egocentric members probably assume their views to be the same as others' views. And their difficulty in considering abstractions probably also make feelings-of-being-understood an irrelevant concern. Thus, they might egocentrically assume they are understood in early meetings.

Dyadic coorientation studies. Generally, dyadic coorientation research to date appears to indicate -- in support of the hypotheses presented here -- that congruency is the first dominant concern (increases first) in interpersonal communication, followed by accuracy and agreement, respectively; and accuracy and agreement have been found to generally increase with more communication (e.g. Wackman, 1973; Pavitt and Capella, 1979).

However, as recommended by Pavitt and Capella, much coorientation research suggests that patterns of change would not appear so neat if various/particular aspects of the situation were monitored and if multiple measures were taken.

Specifically, the many coorientation studies involving situational (norm) conditions, coorientation variables and/or communication behaviors -- examples outlined below -- suggest the need for more research to investigate such relationships.[3]

independent variables	*dependent variables*	
norm conditions (family communication pattern norms)	*coorientation states communication behaviors*	*O'Keefe, 1971*
norm condition (family communication pattern norms)	*communication behaviors*	*Ward, 1968; Wackman, 1968*
communication behaviors	*coorientation states*	*Chaffee and McLeod (in Wackman, 1973); Beatty, 1970*
expected coorientation states	*communication behaviors*	*Clarke, 1971; Stamm and Pearce, 1971*
communication behaviors (of teacher)	*norm conditions (student participation pattern norms)*	*Amidon and Gaimmatteo, 1967*
coorientation states	*norm conditions ("balance")*	*Newcomb, 1961*

The above studies suggest considerable "reciprocal causality" among interpersonal communication-related variables. Laing et al (1966) support this idea, suggesting a causal pattern in the form of a "spiral of reciprocal perspectives." In other words, people's perceptions of each other (coorientation states and expectations of coorientation states) influence their communication behaviors, which in turn influence their shared communication norms, leading to new interpersonal perceptions, etc. The clear implication is that situational norms and member behaviors may affect coorientation in ways generally undetectable by two-measure coorientation studies.

Group psychotherapy/group dynamics studies. Until very recently, most researchers in group psychotherapy and related areas of group dynamics assumed that intensive, long-term group experiences help people/patients become more accurate perceivers of themselves and others. Group therapy, in fact, has been frequently advised for patients with difficulty knowing how others perceive them (Burke and Bennis, 1961; Wyrick, 1979).

Despite the strength/popularity of the above assumption, the small amount of research that has been done has failed to corroborate it.

Gage and Exline (1953) examined changes in small group members' coorientation states (accuracy, congruency and agreement regarding 50 statements concerning group process) between the third and the twelfth of fifteen meetings. Their data indicated: (1) accuracy increased in only one of the four groups they studied and remained about the same in the other three groups;[4] (2) agreement decreased slightly in two groups and stayed about the same in the other two; and (3) congruency decreased slightly in one group and stayed about the same in the other three.

Newcomb's above noted study (also footnote 3) involved two 17-member college dormitory units over time -- vs. face-to-face discussion groups. Unfortunately, Newcomb's measures, measurement problems, and his preoccupation with "balance" (affecting the data reported in his book) make it impossible to determine a complete and meaningful pattern over time in either of the two groups.[5]

Dymond (1949) studied "empathy" (accuracy) in eight, eight-week, six-to-seven member groups that met weekly to plan a project as a part of a group dynamics course. Measures, for self and others on six personality characteristics, were taken twice, after the third and eighth meetings. Also, a non-participating observer was assigned to each group.

Although Dymond had data to calculate congruency and agreement as well as accuracy, she focused her analysis and discussion on accuracy. On the whole, there was a slight, but non-significant increase in accuracy. Interestingly, a breakdown by sex indicated that accuracy increased significantly for the females (about half of the total participating), but not for the males. The most interesting finding in terms of the research reported here were the observers' reports -- and their correspondence to changes (increases and decreases) in accuracy.

> (The group observers) reported large qualitative differences in the groups themselves. Some groups functioned very smoothly, some were deadlocked in struggles for leadership and others were characterized by apathy. A good many of these differences were reflected in the group scores. Group 1 was characterized by smooth relationships, a high degree of interest in their project, and a good deal of cooperative effort. Group 8 stood at the other end of the scale. It was broken into two antagonistic factions and accomplished no real work as a result of personal feuding. This group's attempts to empathize with each other were actually less successful, on the average, the second time than the first. (Dymond, 1949, p. 130)

The above finding certainly implies that variables other than time spent communicating influenced accuracy in the groups.

Burke and Bennis (1961) examined relationships between small group members' actual and ideal perceptions of themselves and other members (on aspects of "friendliness", "dominence" and "participation") after the first and last (tenth) meetings for six, 13-15 member, three-week groups. They found increases in the intrapersonal measure of similarity between members' perceived actual and ideal selves. Also, there were greater changes in member perceptions of others than in self-perceptions. However, there were no significant increases in the interpersonal measure of agreement (comparison between members' self ratings and mean ratings of each member by all other members) for any of the six groups studied -- even at $p < .1$.

Osborn (1975) studied level of "consensus" (measured as amount of variance) in members' perceptions of group emotionality (defined in terms of Bion's, 1961 theory) after several meetings, including the first and last (45th) meetings of four groups. Contrary to expectations, she found that consensus decreased as the number of sessions increased. She concluded that either individual personality characteristics -- of some or all members -- exerted increasingly strong and idiosyncratic influences over their perceptions of the group; or that some total group phenomenon -- possibly "intensity of affect" -- worked to depress consensus in certain sessions. It should be noted that Osborn's study is the only research the

author could find that measured member perceptions of the total group -- vs. of individual members -- over time.

Wyrick (1979) studied accuracy and congruency in an 11-member psychotherapy group that met for 28 one and one-half hour sessions over a 14-week period. The members responded twice to five sets of measures.

As expected, Wyrick found that all members felt they knew each other better following therapy. However, contrary to predictions, "interpersonal perceptual congruency" (accuracy) decreased from the eighth to the 27th session and "intrapersonal perceptual congruency" (congruency) stayed about the same.[6]

Wyrick stressed the need for replicating this type of research, taking several measures of accuracy and related variables and making careful observations of events throughout the lives of groups studied. He suggested that accuracy may not increase throughout the life of a group, but may decrease as a function of group "transferences, resistance, other unconscious processes, and conscious or unconscious conflicts between members . . ." i.e. may rise and fall at different times and may not necessarily be higher in a late session than in an early one.

METHODS

Group and group members. One 12-member discussion group was used for this research. The group met weekly for 15 two and one-half hour laboratory sessions as a part of a graduate level group dynamics course at the University of Wisconsin-Madison.[7]

The 12 group members consisted of: 7 men and 5 women; ranging in age from 23 to 53, with only one member over age 35; all graduate students in education; and 4 foreign students, one each from Thailand, Malaysia, Finland and Germany.

The weekly (Wednesday) laboratory sessions were relatively unstructured, the only parameters being mandatory attendance at all sessions. The instructor's role could be described as "non-directive" in that he provided occasional interpretations[8] of ongoing group process as he perceived it, but did not otherwise lead or provide task direction for the group.

Besides Wednesday laboratory sessions, the group met on Fridays for formal lecture-discussions (on group dynamics theory) that were led by the instructor or (more frequently) by designated students.

At the beginning of the semester members were informed that several graduate students planned to use the laboratory sessions as a data base for research. The data-collecting would involve video taping group sessions and having members fill out a brief (ten minute) questionnaire at the close of each session. Members were

also asked to sign a "Documentation of Informed Consent" form (approved by the UW School of Education Human Subjects Committee) that assured confidentiality in reporting data.

The Coorientation Questionnaire. Members were presented with a series of statements following meetings and were asked to rate their extent of agreement-disagreement with each statement in three ways: (1) for themselves; (2) according to how they felt the rest of the group was rating the statement; and (3) according to how they felt the rest of the group perceived them as rating the statement.

The statements presented to members aimed to reflect concerns in each of Erikson's eight ego-identity stages (Erikson, 1950)[9] as such concerns are dealt with in the self-analytic group setting. Previous research (e.g. Davie, 1971) has indicated that the eight, bipolar Eriksonian concerns are always relevant in small groups, though one or two concerns will be especially relevant at any given time in the life of a group.

The content of most of the statements was taken from well-validated Eriksonian instruments developed and/or described and used by Boyd and Koskela (1970), Davie (1971), and White (1976).[10] Also, all statements used in data analyses survived an additional test of their validity in reflecting Eriksonian concerns.[11]

It should be noted, however, that for the hypotheses tested in this research, the specific content that group members responded to was not so important as (1) that it was similar/comparable from week to week and (2) that they could respond to it meaningfully and could therefore produce reliable and valid coorientation scores that could be tested for predicted changes.

Since the members expressed difficulty responding to more than 16 statements (i.e. giving more than 3 times 16 or 48 responses) immediately following their two and one-half hour meetings, a maximum of 16 (12-16) statements were administered each week. These statements were selected to include: at least one representative of each Eriksonian stage; about half positively and negatively worded statements; and only a very few, if any, statements that had been used the preceding week.

Thus, the weekly instrument was not too long, contained varied content, and, while items from week to week were not identical, they remained similar (representative of the eight Eriksonian concerns). Figure 2 illustrates the coorientation instrument.

Group members were instructed both verbally and in writing (Figure 2) to respond according to how they felt about each statement) as that statement described

the preceding discussion and/or the member's participation, i.e. members were CLEARLY instructed to respond "in light of today's discussion." The author felt that the strong emphasis on responding according to what had happened in the immediately preceding discussion would help minimize the chances of members responding to some items according to their own personalities, to prior experience with the test, and/or to knowledge of how other members had previously responded to the items. Group members were also instructed not to guess. That is, if an item did not make sense to a member in light of the preceding discussion (either for him/herself, the group and/or the group's perception of him/her), the member was instructed to skip the item and go on to the next one.

As indicated in Figure 2, agreement-disagreement ratings for self were on a six-point scale. The six-point scale was used as an additional reminder for members not to guess. (It was hoped that if a member wanted to mark a neutral category but was forced to choose one side or the other, he/she would reconsider the relevance of the statement.)

To indicate perceptions and "metaperceptions" of the rest of the group's ratings, each member was asked to mark what proportion of the rest of the group he/she perceived as giving a "5" or "6" agreement-disagreement rating (strong agreement), and what proportion he/she thought perceived him/her as rating the statement "5" or "6" (see Figure 8). This method was chosen over having members estimate "average" group ratings because of serious difficulties pretest subjects expressed in attempting to reify-or view the group or the "rest of the group" as an average.

The coorientation measures. The author would have preferred using Pearson correlation and partial correlation to determine coorientation measures. Pearson correlation would have controlled for response set, a member's potential tendency to rate consistently hi or lo and to vary more or less around his or her hi/lo ratings. Partial correlation would have enabled the author to calculate "real accuracy" scores, or accuracy controlling for congruency (Wackman, 1969; McLeod, et al, 1972).

Unfortunately, at least 20 pairs of items are needed for correlational analyses, and it was previously noted that group members could not meaningfully respond to more than about 12 to 16 coorientation statements following meetings. In the end, the elimination of "bad" (invalid) items further reduced the amount of data per member per session (footnote 11). Only one session (the first) contained sufficient data to even consider correlations.

So there was no alternative other than to use difference scores (D scores) as congruency, agreement, accuracy and feelings-of-being-understood measures. Since

the author was not interested in studying differences between/among particular members or subgroups, but rather in total group changes over time (and to some extent, differences in total member responses to different items at specific times), it was felt that response set would not be a major problem in this research. While no data-transformation method could be found to control for chance accuracy (or accuracy due to congruency), such control was anticipated in later regression analyses.

Calculating D scores to represent the four coorientation measures required some adjustments to account for the various ways members were asked to respond to the coorientation statements. In other words, simple subtraction could not for the most part be used, since members' responses for self, for the group and for the group's view of self were not measured in the same way (see Figure 2). Specific variables contributing to the four coorientation measures are listed below.

VA = MEMBER'S OWN RATING (6-POINT SCALE): Congruency; Agreement; FOBU.

VB = PERCENT OF REST-OF-THE-GROUP MEMBER THOUGHT MARKED "5" OR "6": Congruency; Accuracy.

VC = PERCENT OF REST-OF-THE-GROUP MEMBER THOUGHT PERCEIVED HIM/HER AS MARKING "5" OR "6": FOBU

VD = MEAN OF ALL MEMBERS' RATINGS: Agreement.

VE = PERCENT OF REST-OF-THE-GROUP THAT ACTUALLY MARKED "5" OR "6": Accuracy

Calculating congruency involved adjusting each member's estimate of the percent of the rest-of-the-group that rated a statement "5" or "6" (Variable B or VB above) to make it comparable with the member's own rating (VA). This was done by multiplying the estimated percent (VB) by 5.5 (average of "5" and "6" ratings) and adding the leftover percent (1 - VB) multiplied by 2.5 (average of ratings "1" through "4"). The resulting adjusted figure could then be subtracted from each member's own rating (VA) to yield a measure of congruency.

$$\text{Congruency} = VA - \left[(VB \times 5.5) + (1-VB) \times 2.5\right]$$

The feelings-of-being-understood (FOBU) calculation was virtually the same as the method used for congruency except that each member's estimate of the percent of the rest-of-the-group that perceived him/her as marking "5" or "6" (VC) was substituted for VB, which was used in congruency calculations described above.

$$\text{FOBU} = VA - \left[(VC \times 5.5) + (1 - VC) \times 2.5\right]$$

Agreement was the only coorientation variable where simple subtraction could legitimately be used to determine one of the measures. Each member's own rating for a statement (VA) could be compared to the mean of all members' ratings for the statement (VD).

Agreement = VA - VD

Since group members were asked to indicate for each statement what percent of the rest-of-the-group they thought marked "5" or "6" (VB), accuracy was measured by simply comparing VB to the percent of the rest-of-the-group that actually marked "5" or "6" (VE).

Accuracy = VB - VE

Test-retest reliability.[12] Given the changes generally expected in coorientation scores, test-retest reliability is difficult to measure meaningfully (e.g. Dymond, 1949; McLeod et al, 1972). In this research, a way to avoid taking test-retest measures regarding different group situations was to administer the second test in between group meetings, asking members to respond "as you recall you felt immediately after your last meeting." Two such test-retest reliability checks were conducted. The first was administered two days after session 1 and the second, two days after session 7.

The instrument used for the first reliability check contained a total of 48 items including the same 24 items that the 12 members had responded to immediately following session 1. Pearson correlations were calculated between the 12 members' responses for 21 of the 24 items administered both at time 1 and time 2. (Three items were omitted from the analysis because they had been judged unrepresentative of Eriksonian issues -- see footnote 11.) The instrument used for the second test-retest reliability check contained a total of 16 items including eight items that were among the 16 that members responded to immediately following session 7. Pearson correlations were calculated between the 12 members' responses to these eight items at times 1 and 2.

Table 1 reports the test-retest correlations for session 1 and session 7. Correlations are generally low (highest is .309), but statistically significant (at $p \leq .05$) for all coorientation variables except accuracy in the session 7 correlation.

Test retest correlations were also carried out for the "raw ingredients" (p.9) used in calculating coorientation scores for the above reported test-retest correlations.

Correlations reported in Table 2 are generally much higher than those in Table 1. Correlations are especially high for members' self-ratings, and consequently, the mean rating for the rest of the group and the percent of the rest of the group strong agreeing with members.

Correlations for the percent of the rest of the group agreeing with (marking the same categories as) members, also partly a function of the reliability of members' self ratings, tend to be lower than for the mean group rating and the percent of the group strongly agreeing with the member.[13]

Test-retest correlations for the more abstract self-report measures -- "self of group" and "self of group of self" -- are also lower than correlations for self-ratings and related measures.

RESULTS

Trend tests (via analysis of variance and polynomial regression analyses) and hierarchical regression analyses were carried out to examine coorientation changes over time.

The first step in carrying out these analyses was to select comparable data from the 15 sessions. This was necessary since the previously noted validation procedure (footnote 11) had eliminated many of the original items. About 12 (10-13) comparable items representing seven of the eight stages were located in 10 of the 15 sessions.

Trend Analyses. An analysis of variance procedure using orthogonal polynomials (Kirk, 1968) was selected to determine the presence and likely nature (linear, quadratic, cubic, etc.) of time trends in the coorientation variables.[14]

The independent variable in the trend tests reported here is "session", initially coded as session no. 1-15. The dependent variables, each examined separately, are: congruency; agreement; accuracy; and feelings-of-being-understood.

For each dependent variable, analyses of variance were first carried out: (1) using comparable data over 10 sessions as described above; and (2) using all valid data over 15 sessions (about 12-16 items per member per session from the list in footnote 10). Since results were about the same for both sets of analyses, only the first set are reported here.[15]

For each analysis of variance showing statistically significant between session variance (at $p < .05$), tests of significance of the linear, quadratic, cubic, quartic, and quintic functions were performed.[16]

Tables 3, 5, 7 and 9 summarize the results of analyses of variance, of time trends analyses and also results of Newman-Keuls tests (e.g. Keuls, 1952) to locate significant differences between session means.

Since time trends analyses did not yield actual prediction equations for fitting lines or curves, polynomial regression analyses were carried out[17] only for those dependent variables with one or more significant polynomial trends and to the degree indicated by time trends analyses.

The polynomial regression analyses indicated the fitted lines or curves accounted for only a small portion of the variance in the dependent variables (most R^2 values were less than .01). However, since the coorientation variables are seldom measured at more than two points in time, the author decided to go ahead and graph observed and predicted coorientation scores for the 10 sessions analyzed. The resulting apparent trends -- despite large within session variance -- might suggest ideas for future research and also be of interest to other coorientation researchers.

The trend analysis for congruency (Table 3) indicates significant ($p < .01$) linear and cubic time trends for congruency. The quartic trend is also significant at $p < .01$.

The observed mean congruency values were plotted (Figure 3) to determine the highest meaningful polynomial level for fitting a curve. The plotted means show that congruency appears to begin high, drop sharply in session 2-4, begin and continue to increase in sessions 5-11 and then fall in the final few sessions. Thus, the plotted values appear to indicate a cubic trend. Table 4 therefore presents the regression of congruency on the linear, quadratic and cubic functions of session; and Figure 3 shows the fitted prediction equation obtained from this analysis.[18]

It should be noted that despite the overall significance of the prediction equation and the significance of individual polynomial terms, all three functions of time (session) combined account for only about .9 percent of the variation.[19]

Table 5 shows that the trend for agreement is clearly quadratic. Of the five functions tested in trend analyses, only the quadratic is significant ($p \leq .05$) in both analyses.

A plot of observed mean agreement values over 10 sessions corroborates the likelihood of a quadratic trend. Agreement appears to increase up to session 8 and then drop over the remaining seven sessions.

A regression of agreement on the linear and quadratic functions of session (Table 6) provides a prediction equation, illustrated in Figure 5. As with congruency, the low R^2 indicates that the fitted curve takes up only a very small portion of the variation in agreement.

Table 7 reports a linear accuracy trend. A plot of observed mean accuracy values (Figure 5) corroborates the linear trend. Accuracy generally appears to begin low and increase throughout the semester.

A simple linear regression of accuracy on session (Table 8) provides the prediction equation, illustrated in Figure 6. Again, it's worth noting that the regression line takes up less than one percent of the variation.

The analysis of variance for feelings-of-being-understood (Table 9) does not show statistically significant (at $p \leq .05$) between session variance. Thus, there was no point in carrying out trend analyses or Newman-Keuls tests for this variable.

Hierarchical Regression Analyses. Since the above reported polynomial regression analyses (for coorientation variables with trends determined to be significant via trend tests) indicated that time ("session") by itself accounted for 1 percent or less of the variance in every coorientation variable examined, it was considered important to determine other contributors to coorientation variance.

The author decided to focus exclusively on accuracy. This decision assumed that accuracy -- of all the coorientation variables -- is the most important outcome of interpersonal or small group communication where progress on a task (even the task of finding a task) is a major goal.

As Janis' (1972) studies of "groupthink" have implied, there is little value of group over individual-level problem-solving when the solution agreed upon is one that members understand solely in terms of their own contributions or their own perceptions of the leader and/or "group spirit" -- vs. pros and cons generated by other members. In important situations -- e.g. involving a major organizational or national decision -- such "egocentric" problem solutions can have disastrous consequences.

In keeping with the above argument, several researchers (e.g. Cronback, 1955; McLeod et al, 1972; and Wackman, 1969) have asserted and/or demonstrated that congruency (i.e. assumed similarity to the other dyad or group member(s)) is often largely responsible for apparent accuracy, and therefore also, for agreement. It has already been noted that Wackman (1969) recommends using partial correlation to control for congruency in accuracy scores.

Thus, this research required an analysis procedure that would test the relative contribution of time and congruency to accuracy. Agreement and feelings-of-being-understood (respectively) were also considered potentially relevant contributors.

The hierarchical regression procedure (Cohen and Cohen, 1975) provides a means of assessing the influence of each independent variable examined on a dependent variable. The procedure is especially attractive because the total influence of each independent variable is examined only after adjustments have been made for previously entered variables. In other words, R^2 and the partial correlation coefficients of each variable are determined at the point at which they are added to the equation. So the researcher can predetermine the order of entering independent variables depending on which are believed to be causally more important.

Theoretically more important variables are entered earlier, enabling them to take up the greatest possible variance.

In this research, two hierarchical regression analyses were carried out via the SPSS (Nie et al., 1975) subprogram, "Regression". The analyses used comparable data gathered following ten sessions as in previously reported analyses.

One analysis entered session first -- theorized to be the most important contributor to accuracy, then congruency, agreement and feelings-of-being-understood (FOBU), respectively. The second analysis entered congruency first, then agreement, FOBU and session last, thus determining whether session retained any influence once the other variables had been entered. Tables 10 and 11 present the results of these two analyses.

Entering session first (Table 10), agreement -- surprisingly -- accounts for the most variance by far in accuracy -- i.e. close to 7 percent (R^2 = .0676). Session is a weak second, accounting for .843 percent of the variance. Congruency accounts for .723 percent of the variance, and FOBU accounts for only about .2 percent of the variance.

Entering session last (Table 11), the variance accounted for by agreement and FOBU is about the same (very slightly higher) as with session entered first. However, the variance accounted for by session drops by about .3 percent, and the variance accounted for by congruency increases by about .1 percent.

The R^2 change is statistically significant at $p \leq .05$ or .01 in all analyses. However, since significance is affected by degrees of freedom (Cohen and Cohen, 1975, p. 295), it is more meaningful to consider the variance accounted for by each variable. For example, the .2 percent accounted for by FOBU may be statistically significant, but its real value in contributing to an understanding of accuracy change is doubtful.

Particularly interesting in Tables 10-11 are the beta weights indicating the direction and relative strength of influence of each independent variable in the prediction equations. The betas for agreement are <u>negative</u> and about four times as large as for session. Thus, although accuracy increases linearly as a function of session (Figure 6), agreement exerts a strong negative influence. This finding, combined with the previously noted high R^2 for agreement compared to session, suggests that groups may strive first for agreement -- over, and even at the expense of -- later accuracy, and with minimal influence by congruency. However, additional regression analyses -- to assess the effect of early agreement on later accuracy -- should be carried out to test this possibility.

DISCUSSION

The research findings will be discussed in terms of the initially proposed hypotheses and also in terms of their implications for coorientational measurement in small group research.

Hypotheses 1-4. The coorientation trend analyses (Tables 3-9 and Figures 3-6) revealed trends that bear some similarity to predicted trends. Accuracy, for example, began low and increased somewhat linearly throughout the semester (H_2 and Figure 6). Congruency began relatively high, dropped quickly, increased steadily and then decreased at the end of the semester (Figure 3), a trend predicted in H_1 up to the end-of-semester decrease. The trend in feelings-of-being-understood (Table 9) was difficult to interpret, probably due to the measure's relative abstractness (to be discussed) and resulting invalidity.

Since "session" or time by itself accounted for so little of the variance in congruency, agreement or accuracy (Tables 4, 6 and 8) -- and the appropriate fitted curves/lines were difficult to determine (e.g. Figures 3 and 4), it's clearly important to consider other situational factors that may have contributed to co-orientation change.

An examination of Figures 3-6 shows the trends were clearly affected by dramatic changes in certain key sessions -- particularly sessions 7 and 8. These changes, cooroborated by a qualitative assessment of the videotapes (footnote 12) deserve further discussion.

Specifically, session 7 was characterized by confusion and extreme frustration for most or all members. One member tried hard to initiate a task, but received severe criticism from key members and "disapproving"[20] interpretations from the instructor. In addition, several members were directly confronted with their colleagues' dislike. And, for the first time, members expressed jealousy of sub-groups that had formed. Several members also expressed disgust with the entire group experience; and the generally negative feelings led members to doubt whether I/we "could ever do anything right."

Consistent with this description, the session 7 coorientation measures of FOBU (graph not presented) and congruency (Figures 3 and 4) plummetted, and accuracy and agreement (Figures 5 and 6) also dropped substantially.

In session 8, members struggled for some positive sign that would "save them" from a repeat of the previous week -- or from psychological or real dissolution. They expressed positive feelings toward both silent members and noisy members, objects of previous attack; and these members responded with appreciation. They discussed "commitment" at length and how it is differently expressed by members.

The instructor's comments reflected the group's approval. And the session ended with considerable kidding/laughing and agreement that the group should learn to tolerate diversity.

In keeping with the group's apparent shared satisfaction with these events, the members' session 8 coorientation scores (Figures 3-6) and observer ratings (footnote 12) "skyrocketed" from the previous session. None of the coorientation measures again attained such height in remaining sessions.

These events and measures are interesting in that they suggest communication "lows" may, under certain conditions, predict to "highs" of inter-member understanding and member approval of the group. They also clearly indicate that there are causes other than simple time spent communicating that affect coorientation in small groups. The nature and circumstances of these causes -- i.e. whether they are primarily covert (e.g. shared group norms, including predictable developmental norms) or overt (e.g. an upset member), their origins, and how they affect coorientation need further investigation.

As a start in examining potential contributors to coorientation change, hierarchical regression was used to assess the relative influences of time (session), congruency, agreement and feelings-of-being-understood on accuracy.

A finding -- that agreement by far accounted for the most variance -- was not expected, since simple response set would have made congruency the best predictor. Also, congruency and accuracy appear to be statistically closer than agreement and accuracy.[21]

One possible (perhaps likely) explanation is that the nature of the measures "forced" response set (the effect of perceived agreement/disagreement) to show up more in actual agreement/disagreement than in congruency. More specifically, agreement compared members' individual ratings to the mean for the whole group. Congruency -- in an effort to avoid asking members to reify -- compared individual ratings to a figure adjusted from the proportion of the rest-of-the-group perceived as giving high ratings. If--contrary to the author's intentions -- this congruency measure was less sensitive to actual congruency than would have been the case for a direct comparison between members' self ratings and their perceptions of the group mean, the agreement measure that was used (which did consider the mean) may have been linked to a perceived agreement or congruency measure not used (comparison between self ratings and perception of the mean). Such a measure of congruency, if available, might have then accounted for more accuracy variance than the related agreement measure.

An interpretation of the hierarchical regression results contrary to the above statistical/measurement-related possibility -- i.e. suggesting that agreement/disagreement does somehow predict to accuracy -- is difficult to meaningfully discuss. As far as the author can tell, no previous research has hypothesized an influence of agreement on accuracy or any other variable. This may be partially because coorientation is so seldom measured at more than two points in time. But it also seems logically inconceivable to most researchers that agreement -- an interpersonal measure that does not account for people's perceptions of each other -- could, by itself, "cause"/predict to accuracy (or any other) change.

McLeod et al (1972), however, unexpectedly found agreement with parents -- rather than congruency -- to be the key variable predicting adolescents' TV violence viewing and aggressive behavior. Children who <u>disagreed</u> with their parents regarding the importance of certain school goals (making friends, learning new ideas, etc.) watched more TV violence and had higher scores on measures of aggressiveness. The authors suggested that lack of agreement frustrates adolescents, leading them to seek aggressive outlets. However, they were clearly baffled by the finding and said it is "deserving of more concentrated investigation in future research."

McLeod et al's suggested explanation implies that in order to exert an influence, agreement/disagreement must: (1) occur <u>prior to</u> the phenomenon it influences; and (2) be linked to some awareness and/or affect factor that is different from the coorientational measure of perceived agreement/disagreement or congruency.

This may support traditional psychoanalytic arguments that "unconscious", shared group phenomena underlie and influence overt group activities. Perhaps disagreement, for example, is sometimes linked to powerful unconscious or latent variables that can influence/predict to inaccuracy more strongly -- and earlier -- than can incongruency.

In other words, it seems possible that -- at some covert "awareness" level -- members may "sense" disagreement (or agreement) in a way that, under certain conditions, influences them (predicts to accuracy) before it is measurable as congruency. However, the author has found no literature suggesting such a possibility and it seems that further exploration would require detailed time series observations and coorientation measures.

In this particular research, the author suspects that overt perceptions of disagreement (incongruency) and related variables really had a greater influence on accuracy than such a covert "disagreement link", but that (as previously suggested) the congruency measure used was too imprecise to show its actual impact.

The author could find no research examining relationships (other than response set) between perceptions of agreement/disagreement and accuracy in a small group

setting. However, Pavitt and Capella (1979) have begun to explore such relationships for dyadic communication, proposing that perceptions of disagreement by each interactant are the key force motivating changes in accuracy.

Specifically, based on an extensive review of the coorientation and person perception literature, Pavitt and Capella proposed that five variables -- amounts/degrees of: liking; communication; involvement with issues discussed; utility of knowing partners' views; and confidence (certainty/uncertainty) in own judgments of issues discussed -- mediate the impact of perceived agreement/disagreement on accuracy and also on actual agreement between interactants.[22]

They then used computer modeling to test predicted differences in the process for three types of dyadic tasks -- i.e. to become accurate regarding each other's views (within dyad accuracy task); to become accurate regarding the views of a person/group outside the dyad (outside dyad accuracy task); or to reach consensus on an assigned problem (consensus task).[23]

Results were essentially the same for the three types of tasks and indicated that extent of initial liking relative to disagreement and perceived disagreement was particularly important in influencing ultimate accuracy, agreement and (obviously) perceived agreement.

One possible difference was indicated for the within dyad task under initial conditions of disagreement and perceived disagreement. In time-limited discussions, dislike appeared less likely to stifle information seeking (and therefore accuracy) for within dyad tasks than for outside dyad tasks.

Pavitt and Capella's ideas and findings have potential implications for the research reported here, even though the 12-member group studied in this research was quite different from the dyads in Pavitt and Capella's computer trials -- both in size and in its lack of assigned task or subject matter.

Specifically, the implicit group task was similar in many ways to Pavitt and Capella's within dyad accuracy task. Group members understood that they were meeting to study their own processes, a task that necessarily entailed striving to understand other members' views on relevant issues. Also, although the group could be described as striving for consensus, the consensus was not on a problem-solution (as in Pavitt and Capella's consensus task), but rather on the group orientation toward relevant issues at any given moment.

If the group studied here can be legitimately described as working on a "within group accuracy task" and if Pavitt and Capella's assumptions across tasks -- as well as for the within dyad task -- can be considered applicable, their work may help interpret the unexpected apparent impact of aggreement/disagreement (and,

presumably, perceptions of agreement/disagreement) on accuracy indicated by the hierarchical regression analyses in this research.

First, it should be recalled (Figure 5) that, except for sessions 8 and 11, agreement stayed at about the same low level throughout the life of the group. However, accuracy (Figure 6) increased, though gradually and with considerable fluctuation. (Accuracy was very low in session 2, moderately low in sessions 1, 5 and 7, moderately high in sessions 10 and 13, and especially high in sessions 4, 8, 11 and 14.)

Although the variable "liking" was not measured in this research it seems it could have combined with disagreement (and presumably also, perceived disagreement) to depress accuracy. The author's observations of the group indicate that at least half of the members were strongly disliked by several (or a majority) of the other members. One member's authoritarian leadership was resented; another was criticized for her emotional outbursts; another -- an older woman -- was disliked because of her "saccharine" and "motherly" behavior toward the other members; two members were constantly badgered because of their silence and lack of commitment to the group; and another was disliked because of his patronizing and "preaching" manner. The other six members, though somewhat more popular, were also occasional targets of resentment/dislike. In fact, the author has observed (from beginning to end) about eight similar undergraduate and graduate groups, and the group studied in this research stands out in terms of personality clashes and general animosity.

In addition, with the exception of a few key sessions (e.g. sessions 8, 11 and 14), the members' involvement with issues discussed appeared low -- and much of the discussion centered on "what should we be doing?" vs. on seriously considering an issue of shared interest. However, their relative involvement with the Eriksonian issues is difficult to determine, except to note that they were sufficiently involved to respond to most of the items in all sessions.

In keeping with Pavitt and Capella's assumptions for the within dyad accuracy task, most members clearly considered it important to know each other's views throughout most of the life of the group. This was evident in their recurring discussions on the necessity of sharing perceptions as a means of showing commitment and their efforts to draw in silent members. However, the silent members' relentless refusal to contribute demonstrated their disagreement with the majority norms. Had the author taken measures of perceived (assumed) utility in knowing others' views, the attitudes of certain members would have undoubtedly lowered the overall group score.

The group members' confidence in their own judgments is difficult to gauge without measures; but the author guesses it probably decreased, at least partially

as a function of their increasing awareness of other members' animosity toward their contributions. Besides their increasing hesitation to speak forthrightly in the group, they appeared increasingly fearful of inciting a "disapproving" interpretation from the instructor. (See footnote 20). It was not uncommon for members to comment, "I feel stupid no matter what I say" or "I got attacked last time, and I'm not going to raise that issue again." The latter comment was especially common later in the semester as certain group members were repeatedly curtailed (by other members) in their efforts to eject the instructor from the group.

Finally, in keeping with Pavitt and Capella's assumptions, the members' apparent mutual dislike, relatively low involvement with issues discussed, their perceived lack of utility of knowing other's views (on the part of some), and their decreasing confidence in their own judgments may have also been related to the relatively low level of information-seeking and information-sharing ("productive" communication) that appeared to exist. Compared to other groups the author has observed, these group members appeared to spend considerable time criticizing ("attacking") the group-as-a-whole, the instructor and/or specific members -- vs. sharing/gathering relevant information for problem diagnosis and solution. In addition, most of the sessions were characterized by at least one long silence and/or boring and egocentric monologue by a member.

These observations (interpreted via Pavitt and Capella's assumptions, hypotheses and data) suggest that disagreement/perceived disagreement -- mediated by the members' dislike of each other, their potential moderate to low (unlikely high) involvement with group-relevant issues, their varied perceptions of utility in knowing each other's view, and their likely decreasing confidence in their own views -- may have resulted in lowered information seeking and sharing and have ultimately depressed accuracy. This is consistent with Pavitt and Capella's hypothesized impact of perceived disagreement on accuracy for within dyad accuracy tasks since perceived utility probably did not stay as high as would be necessary to yield sufficient increased communication to overcome lowered confidence. Since these group discussions could hardly be called time-limited it is also consistent with Pavitt and Capella's finding that, in time-limited situations, dislike does not stifle communication and eventual accuracy.

Obviously, though, more research is needed to precisely measure perceived disagreement, to determine its relation to disagreement, and to link it -- via liking, involvement, perceived utility, confidence in judgments and amount of communication -- to accuracy change. Given a refinement of the coorientation

measures, it seems the additional data could be gathered rather easily by adding more questions to the coorientation instrument and by quantifying (by observing/counting) messages and message-types sent and received. Analyses could use multiple regression to consider mediating variables and assess the impact of prior agreement/disagreement and perceived agreement/disagreement on later accuracy. As a start, regression and/or cross-lagged correlation analyses to determine the effect of early agreement on later accuracy for the data collected in this research would be worthwhile. Focusing such analyses on sessions with particularly low and high agreement and accuracy scores (e.g. sessions 7 and 8) might be especially revealing.

In future longitudinal small group research, it might also be valuable to assess antecedent congruency/accuracy states -- i.e. to examine whether expectations of agreement or disagreement are confirmed or disconfirmed (Stamm and Pearce, 1971), their relation to agreement and other measures -- as well as to ongoing events, and their impact on later antecedent states, coorientation measures and other phenomena/events.[24] Such research could help determine more specifically the circumstances under which perceptions of agreement/disagreement (and/or agreement/disagreement) is most likely to behave as a strong independent variable.

As previously discussed, more research should also be done to explore the possibility that disagreement and covert links different from conscious perceptions of disagreement may depress later accuracy. In this research a visual examination of the trends (Figures 5 and 6) and the signs of the beta weights (Tables 10 and 11) suggest that this may have occurred, though (as has been discussed) a clear interpretation is impossible due to intercorrelations among the measures and/or the imprecise measure of congruency that was used. Such a phenomenon does appear consistent with observations of other close-knit, rather intense groups -- such as those described by Janis (1972) -- where pressures to reach agreement and associated frustrations may have been at least partially responsible for later gross inaccuracy (false consensus -- described by Scheff, 1967) and disastrous decisions.

Measurement problems and recommendations. Whenever coorientation is measured between an individual and a group or between groups, there is a danger that forced reification (demand that a group be perceived as a single unit -- or as an "average") will be meaningless to one or both coorienting units (e.g. Chaffee, 1971; McLeod et al, 1971; McLeod et al, 1972).

In this research, the author attempted to avoid a reification problem by asking group members to estimate the percent of the rest of the group they perceived to agree strongly with statments (mark "5" or "6" on rating scales). And indeed, group members complained much less about this method (and there were far fewer missing data) than in informal pretests requesting estimates of "average" rest-of-group ratings.

However, simply knowing members' perceptions of the percent strongly agreeing meant sacrificing other potentially important information -- e.g. the percent mildly agreeing (marking "4" on the rating scale), the percent mildly or strongly disagreeing, or the percent failing to respond altogether. A more complete distribution of members' perceptions of the group -- for comparisons with self ratings and actual group responses -- would yield more meaningful congruency and accuracy scores.

In the type of group studied for this research, the challenge would be to design a questionnaire to yield such additional information, contain sufficient total items and still require only about fifteen minutes to complete.

This research does appear to offer evidence for the value of Eriksonian issues as objects of orientation in groups. For the most part, members had no trouble responding meaningfully to the items -- at least for themselves and their perceptions of others. Clearly, though, more work should be done to validate items and develop comparable (yet different) weekly instruments with effective built-in reliability and validity indicators.

The measure of feelings-of-being-understood (FOBU) used in this research deserves some discussion, since FOBU has never before (as far as the author can tell) been measured along with the other coorientation variables.

First, it should be recalled that the calculation to yield the measure of FOBU was similar to the congruency calculation. FOBU was a comparison between a member's own rating and a figure adjusted (from the percent of the rest of the group the member thought perceived him/her as strongly agreeing with the statement) to be comparable with the member's own rating.

FOBU was found to be somewhat less reliable than agreement and congruency and somewhat more reliable than accuracy (Table 1). The relatively low reliability of FOBU was reflected in the low reliability for its unique ingredient (Table 2). In addition, the rough validity indicators used in this research (footnote 12) showed FOBU to be generally less valid than the other three measures.

More interesting, FOBU was found to be very highly correlated with congruency (Table 12). This -- in combination with the relatively low reliability and validity of the variable -- indicates to the author that members were unable to validly answer the necessary "FOBU" question: "What percent of the rest of the group do you think perceives you as strongly agreeing with the statement?" Instead, they tended to give the same response as to the previous (congruency- and accuracy-related) question: "What percent of the rest of the group do you think agrees strongly with the statement?" Thus, their FOBU scores (comparison between "FOBU" responses and self-ratings) were often virtually the same as their congruency scores (comparison between "congruency/accuracy" responses and self-ratings).

In hypothesizing change in FOBU, the author assumed that the extent to which people feel understood by communication partners is an important communication outcome, as worthy of study as the other coorientation variables. At least in this research, however, it appears that: (1) FOBU was dominated by a far greater concern with congruency; and/or (2) the FOBU questions were too abstract (required too much thought after a two and one-half hour meeting), and members could most easily react by either marking the same places as they had for "congruency/accuracy" questions or by leaving the "FOBU" questions blank.

The true explanation is probably a combination of both possibilities. Observation of the confusion and disorganization in many of the group meetings suggests that members were too concerned with "what should I/we do?" to worry much about the rest of the group's ability to perceive them accurately. Congruency -- or assumed similarity/dissimilarity -- was probably a much more dominant (and manageable) concern. And the dominance of the concern probably influenced members to confuse it with other concerns, and therefore mark the "FOBU" question the same as the "congruency/accuracy" question with little or no awareness of the differences.

An examination of missing data lends support for the second possibility, that the FOBU questions used in this research were too abstract. It was previously noted that members were asked to skip whole items or item sub-questions they couldn't meaningfully respond to "in light of the previous discussion." Table 13 shows that there were more missing data for FOBU than for any other variable, indicating that members skipped the "FOBU" question more often than they skipped the other two questions for the items on weekly instruments. Thus, it appears that --in the measures used here -- members frequently couldn't and therefore didn't evaluate the extent to which they felt understood.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

Support for continued and expanded study of issues addressed in this research come from a number of prominent communication researchers as quoted in the May, 1980 issue of Context, the newsletter of the Interpersonal Communication Division, International Communication Association.

For example, Gerald Miller emphasizes the importance of studying relational development over time and associated communication variables.

> Two key terms that I expect to direct considerable research during the 80's are relational and developmental. The potential payoffs of using relationships rather than individuals as the unit of analysis has been underscored by numerous writers. Similarly, more and more students of

> interpersonal communication subscribe to the value of over time studies of relational development, stressing the role of communication variables in this process.

Dean Hewes agrees but argues that individual-level variables and their effect on communication must not be ignored.

> ... a more complete theory of communication must be cast at the relational level but that to do so without a thorough understanding of the cognitive capacities of individuals is to seriously underestimate the complexity of communicative phenomena.

Finally, Steven Chaffee stresses the need for better measures to effectively pursue questions linking developmental change in interpersonal perceptions to other, (group-- and/or individual -- level) observations/variables.

> We have improved our schemes for coding the overt messages people exchange, but the observation of interpersonal processes in an interpersonal context continues to elude us. The key may lie in developing ways of observing the state of an interpersonal system at a given time, and then comparing measures taken at different times to infer what interim changes have occurred . . . We have made a start on this in the measurement of interpersonal coorientation states, person perception, and the like. This work needs to be extended conceptually, to include the full range of cross-perceptions interactants hold with respect to one another. Methodological development, towards less obstrusive observational procedures, is also needed. And a major challenge lies in the explication of appropriate mathematical operations linking raw observation to quantitative measures for data analysis.

The above recommendations, the analyses presented in this paper and the author's observations of group events over the 15 weeks suggest research questions such as the following: How do particular coorientation states (e.g. agreement) at one time affect particular coorientation states (e.g. accuracy) at a later time? How do key roles (e.g. the observer/interpreter role), associated role (communication) behaviors and the histories of these roles in the group affect coorientational change? How does the changing salience of particular issues (e.g. Eriksonian issues) affect coorientation regarding these issues? How do changing coorientation states differ for certain group members -- e.g. from different cultures, of different personalities etc.? And how do such individual changes relate to group events and to patterns of coorientation change?

Further data-gathering and analyses are also needed to see if and how questions and such as the above apply to groups other than the relatively "structureless" self-analytic group studied here -- e.g. to task groups like university committees, government legislative groups, or newspaper editorial staffs; to sports teams; to

military units; or to more personal/social groups such as families and other household units, neighborhood groups, clubs and adolescent cliques.

As a necessary part of such research, new and improved measuring instruments and techniques are clearly needed, especially if the "full range of (members') cross perceptions" (Chaffee above) is to be tapped and more abstract interpersonal perception measures such as feelings-of-being-understood are to be meaningfully studied.

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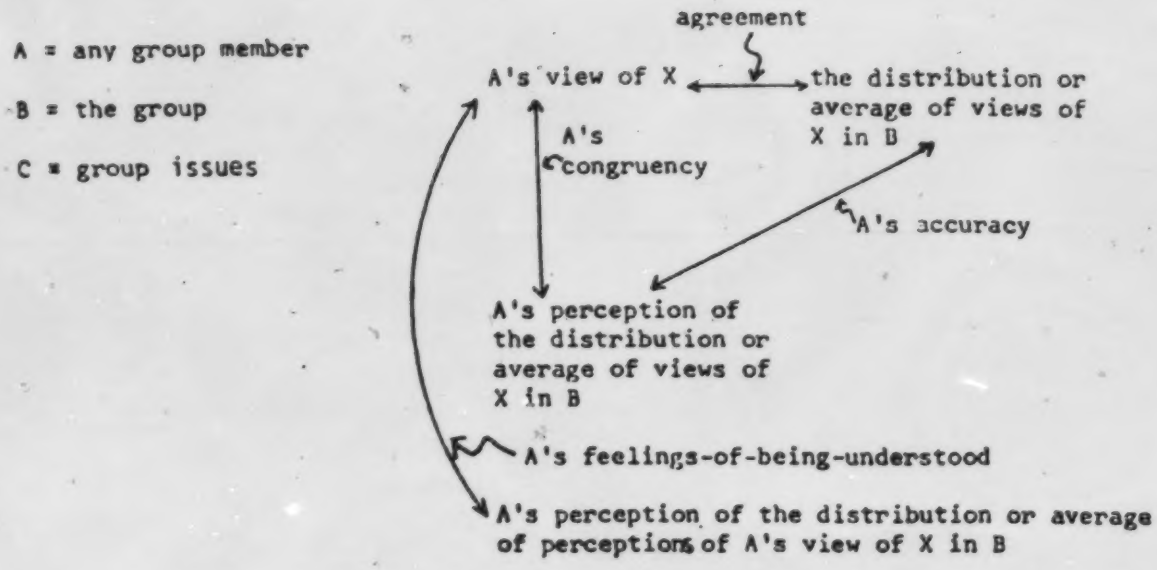
A = any group member
B = the group
C = group issues
agreement
A's view of X
the distribution or average of views of X in B
A's congruency
A's accuracy
A's perception of the distribution or average of views of X in B
A's feelings-of-being-understood
A's perception of the distribution or average of perceptions of A's view of X in B

Figure 1. Coorientation model as applied to small groups

Definitions of some important coorientation terms are as follows:

Congruency --- the relationship, at a given time, between a member's (A's) view of X (group issues) and A's perception of the distribution or average of views of X in the group, B.

Accuracy --- the relationship, at a given time, between A's perception of the distribution or average of views of X in B and the actual distribution or average of views of X in B.

Feelings-of-being-understood --- the relationship, at a given time, between A's view of X and A's perception of the distribution or average of perceptions of A's view of X in B.

Agreement --- the relationship, at a given time, between A's view of X and the actual distribution or average of views of X in B.

Coorientation state --- a specific score for member congruency, accuracy, feelings-of-being-understood or member-group agreement regarding group issues at a given point in time.

	DISAGREE						AGREE
Today's discussion was very superficial.	(1)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
I was an aggressive member of the group today.	(2)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
We spent more time talking about what we might do than actually doing anything.	(3)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
I felt very safe and relaxed in the group today.	(4)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
We behaved more like 12 individuals than like a group.	(5)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%

Figure 2. Examples of Eriksonian items on coorientation instruments presented to fall 1977 group members following weekly meetings. See footnote 10 for the stage-specific Eriksonian concerns reflected by these and all other items used. The directions accompanying each weekly instrument were as follows:

Listed below are a number of statements that might be used to describe today's group discussion and/or your participation. Next to each statement, indicate the extent to which you personally agree or disagree.

Beneath each statement and next to the letter "a" indicate approximately what proportion of the rest of the group (excluding yourself) you think agreed strongly with the statement, i.e. marked one of the two spaces at the right end of the scale.

Beneath each statement and next to the letter "b" indicate approximately what proportion of the rest of the group you think perceive you as agreeing strongly with each statement, i.e. as marking one of the two spaces at the right end of the scale.

DO NOT GUESS. In other words, if a statement does not make sense to you in light of today's discussion, skip it and go on to the next statement. If you feel you cannot respond to part "a" or part "b" for a statement, leave it blank.

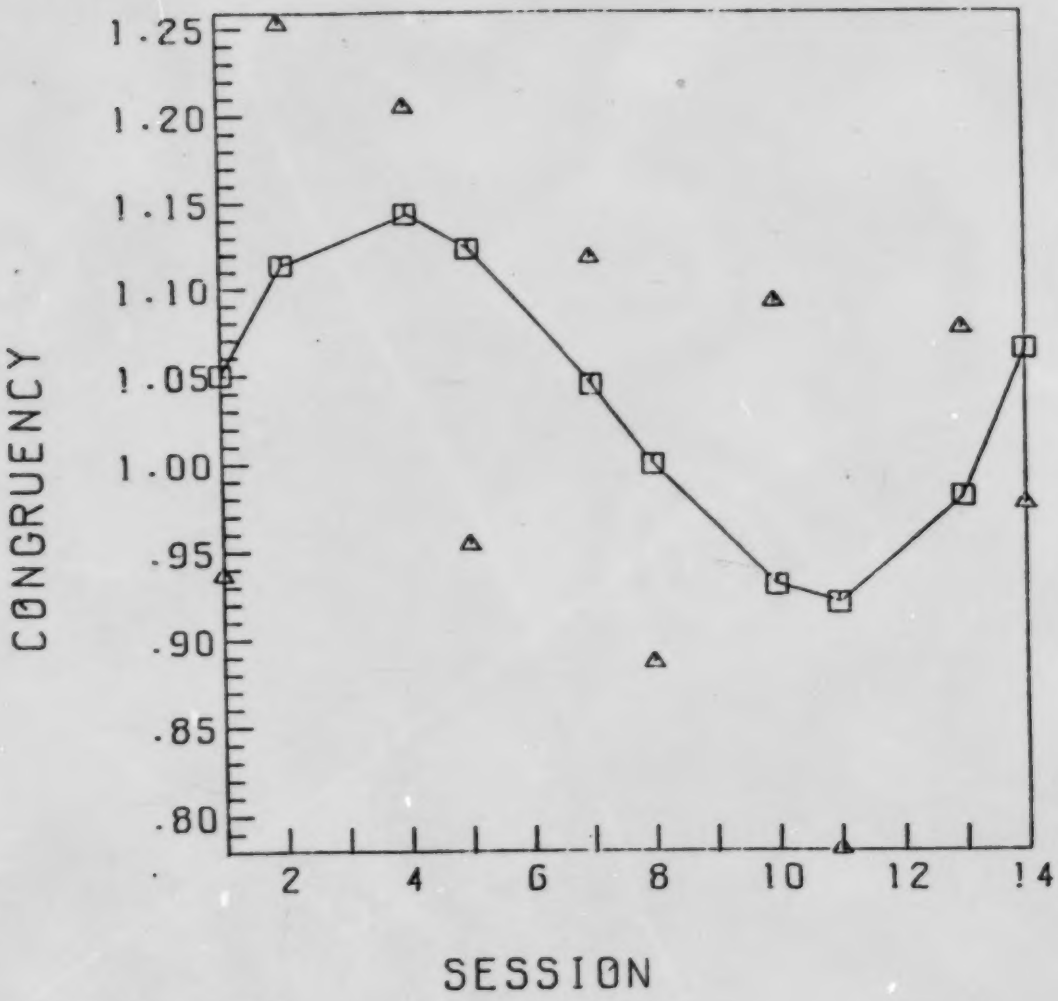

Figure 3. Plot of observed, mean congruency scores (triangles) for 10 sessions (comparable data). Fitted curve represents the prediction equation, $Y = .9462 + .1275X - .0239X^2 + .0011X^3$ (Table 4), where Y is congruency and X is session. NOTE THAT HIGH CONGRUENCY SCORES REFLECT LOW ACTUAL CONGRUENCY AND VICE VERSA.

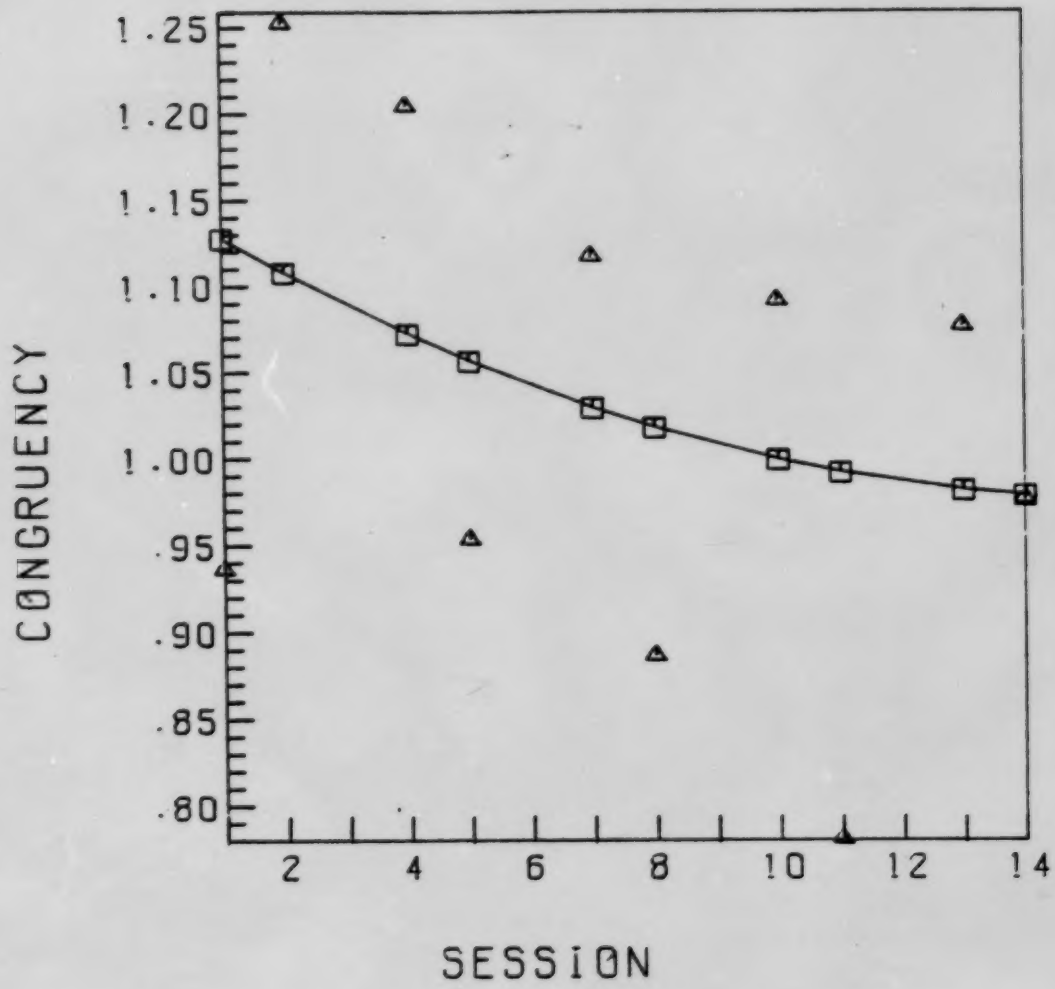

Figure 4. Plot of observed, mean congruency scores (triangles) for 10 sessions (comparable data). Fitted curve represents the prediction equation $Y = 1.1494 - .022X + .0007X^2$ (regression analysis not presented), where Y is congruency and X is session. NOTE THAT HIGH CONGRUENCY SCORES REFLECT LOW ACTUAL CONGRUENCY AND VICE VERSA.

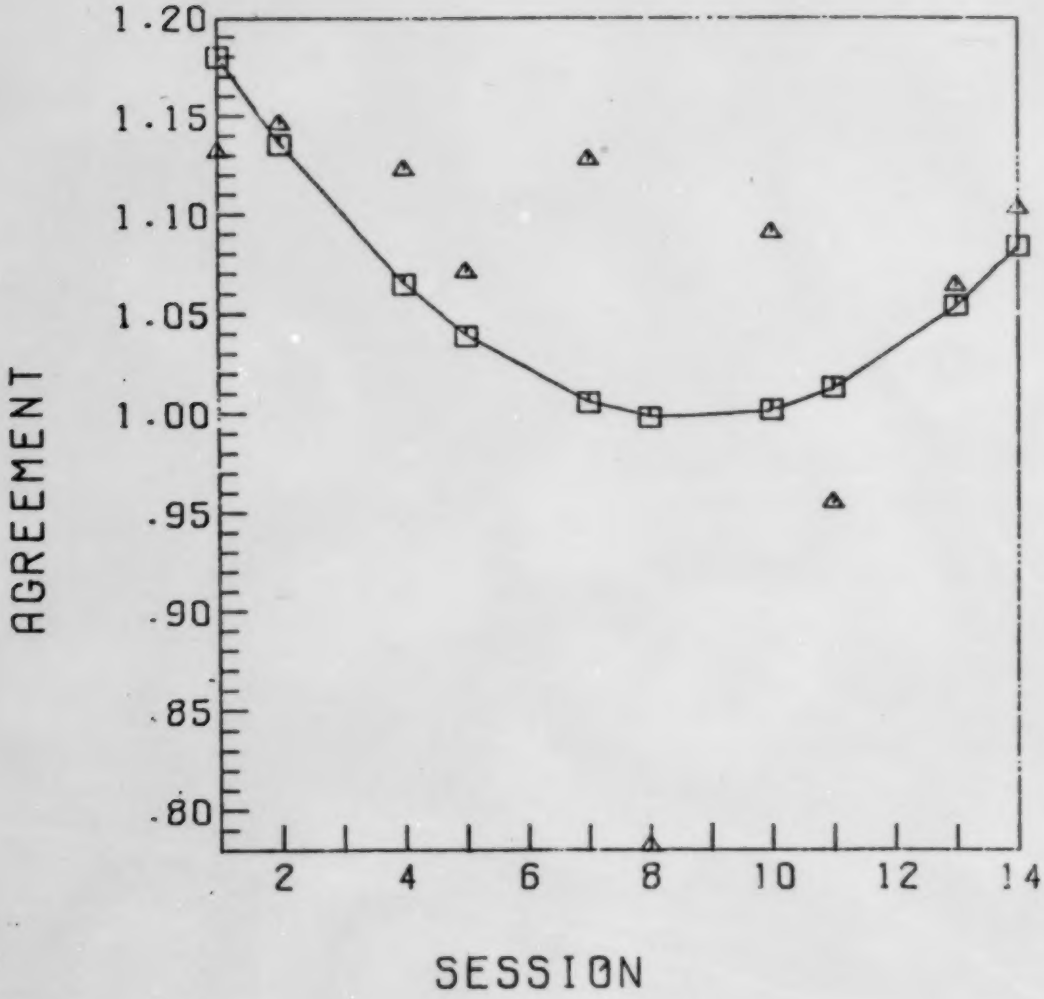

Figure 5. Plot of observed, mean agreement scores (triangles) for 10 sessions (comparable data). Fitted curve represents the prediction equation, $Y = 1.2311 - .0539X + .0031X^2$ (Table 6), where Y is agreement and X is session. NOTE THAT HIGH AGREEMENT SCORES REFLECT LOW ACTUAL AGREEMENT AND VICE VERSA.

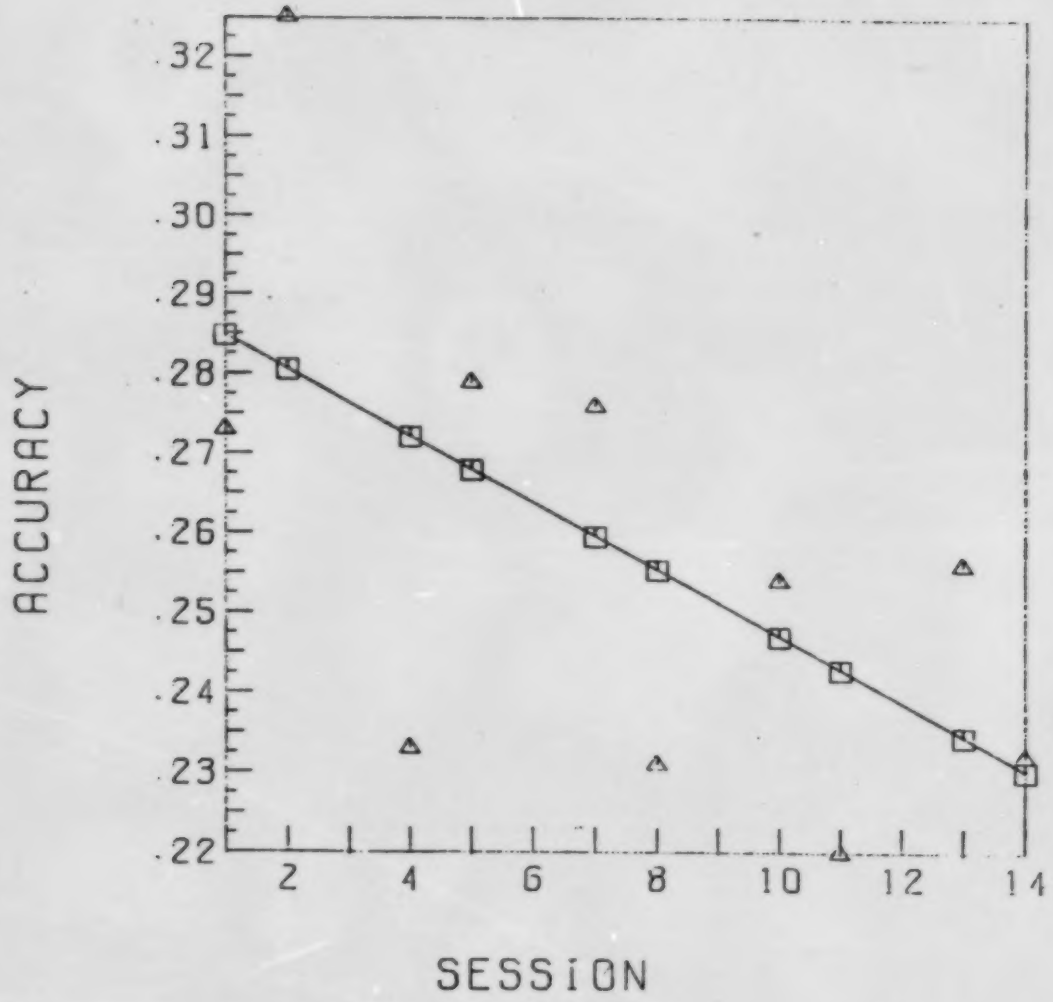

Figure 6. Plot of observed, mean accuracy scores (triangles) for 10 sessions (comparable data). Fitted line represents the prediction equation, Y = .289 - .0042X (Table 8), where Y is accuracy and X is session. NOTE THAT HIGH ACCURACY SCORES REFLECT LOW ACTUAL ACCURACY AND VICE VERSA.

Table 1

Sessions 1 and 7 Test-Retest Correlation Coefficients for four Coorientation Variables

	Session 1 (and two days later)	Session 7 (and two days later)
Congruency	.243**	.314**
Agreement	.309**	.303**
Accuracy	.129*	.121
FOSU	.179**	.251**

*p $\leq$.05
**p $\leq$.01

Note: Session 1 correlations are between the 12 members' responses to 21 Eriksonian items immediately following session 1 and again, two days later. Session 7 correlations are between the 12 members' responses to 8 Eriksonian items immediately following session 7 and again, two days later.

Table 2

Sessions 1 and 7 Test-Retest Correlation Coefficients for raw Coorientation Data -- Uncombined Self and Group Perceptions of Eriksonian Issues

	Session 1 (and two days later)	Session 7 (and two days later)
SELF rating (VA)	.572**	.540**
self of group (VB)	.298**	.395**
self of group of self (VC)	.148*	.374**
group average (VD)	.847**	.845**
% strongly agree (VE)	.726**	.295**

*p $\leq$.05
**p $\leq$.01

Note: See note for Table 1.

Table 3

Congruency : Ten Sessions, Comparable Data
Analysis of Variance

SOURCE	SS	df	MS	F	p
Mean	1325.461	1	1325.461	2143.31	$<.001$
Between Sessions	23.840	9	2.649	4.28	$<.001$
Within Sessions	753.850	1219	.618		
Total	2103.151	1229			

Analysis of Variance: Trend Test Summary

SOURCE	SS	df	MS	F	p
Between Sessions	23.840	9	2.649	4.28	$<.001$
Linear Trend	3.337	1	3.337	5.40	.020
Quadratic Trend	.015	1	.015	.02	.875
Cubic Trend	4.586	1	4.586	7.42	.007
Quartic Trend	3.842	1	3.842	6.21	.013
Quintic Trend	11.569	1	.569	.92	.338
Within Sessions	753.840	1219	.618		

NEWMAN-KEULS TESTS

Session	2	4	7	10	13	14	5	1	8	11
Mean	1.253	1.205	1.118	1.092	1.077	.977	.954	.937	.887	.781

Note: Means underlined by the same line are not significantly different at $p < .1$; all other combinations are significantly different at $< .1$.

Table 4

Regression of Congruency on the Linear, Quadratic and Cubic Functions of Session: Ten Sessions, Comparable Data

Variable	Coefficient (B)	Standard Error	Beta	Partial Correlation Coefficient	T (1226 df)	Partial F (1,1226 df)	p
Constant	.9462	.109		.241	8.690	75.552	$<.001$
Session	.1275	.064	.688	.056	1.978	3.914	.048
Session^2	-.0239	.010	-1.910	-.068	-2.379	5.661	.018
Session^3	.0011	.0004	1.291	.071	2.475	6.128	.013

Analysis of Variance Summary Table

Source	SS	df	MS	F	p
Regression	6.924	3	2.308	3.67	.012
Residuals	770.879	1226	1629		
Total	777.803	1229			

Standard error of estimate: .793

Multiple R: .0944

R^2: .0089

Table 5

Agreement : Ten Sessions, Comparable Data
Analysis of Variance

SOURCE	SS	df	MS	F	p
Mean	1467.591	1	1467.591	2528.61	$<.001$
Between Sessions	15.437	9	1.715	2.96	.002
Within Sessions	752.772	1297	.580		
Total	2235.800	1307			

Analysis of Variance: Trend Test Summary

SOURCE	SS	df	MS	F	p
Between Sessions	15.437	9	1.715	2.96	.002
Linear Trend	1.475	1	1.475	2.54	.111
Quadratic Trend	3.001	1	3.001	5.17	.023
Cubic Trend	1.426	1	1.426	2.46	.117
Quartic Trend	.480	1	.480	.83	.363
Quintic Trend	.294	1	.294	.51	.477
Within Sessions	752.772	1297	.580		

NEWMAN-KEULS TESTS

Session	2	1	7	4	14	10	5	13	11	8
Mean	1.146	1.132	1.128	1.123	1.103	1.091	1.071	1.064	.955	.782

Note: Means underlined by the same line are not significantly different at $p < .1$; all other combinations are significantly different at $p < .1$.

Table 6

Regression of Agreement on the Linear and Quadratic Functions of Session: Ten Sessions, Comparable Data

Variable	Regression Coefficient (B)	Standard Error	Beta	Partial Correlation Coefficient	T (1305 df)	Partial F (1,1305 df)	p
Constant	1.2311	.067		.455	18.441	340.070	$<.001$
Session	-.0539	.021	-.303	-.071	-2.582	6.667	.01
Session^2	.0031	.001	.271	.064	2.309	5.332	.021

Analysis of Variance Summary Table

	Source	SS	df	MS	F	p
Standard error of estimate: .7652	Regression	4.328	2	2.164	3.70	.025
Multiple R: .075	Residuals	764.111	1305	.586		
R^2: .006	Total	768.439	1307			

Table 7

Accuracy : Ten Sessions, Comparable Data
Analysis of Variance

SOURCE	SS	df	MS	F	p
Mean	81.943	1	81.943	1931.09	$<.001$
Between Sessions	1.157	9	.130	3.03	.001
Within Sessions	51.769	1220	.042		
Total	134.870	1230			

Analysis of Variance: Trend Test Summary

SOURCE	SS	df	MS	F	p
Between Sessions	1.157	9	.130	3.03	.001
Linear Trend	.384	1	.384	9.04	.003
Quadratic Trend	.024	1	.024	.56	.453
Cubic Trend	.006	1	.006	.15	.702
Quartic Trend	.023	1	.023	.55	.459
Quintic Trend	.006	1	.006	.15	.697
Within Sessions	51.769	1220	.042		

NEWMAN-KEULS TESTS

Session	2	5	7	1	13	10	4	14	8	11
Mean	.325	.279	.276	.273	.256	.254	.233	.232	.231	.220

Note: Means underlined by the same line are not significantly different at $p < .1$; all other combinations are significantly different at $p < .1$.

Table 8

Regression of Accuracy on the Linear Function of Session: Ten Sessions, Comparable Data

Variable	Regression Coefficient(B)	Standard Error	Beta	Partial Correlation Coefficient	T (1229 df)	Partial F (1,1229 df)	p
Constant	.28900	.01175		.574	24.601	605.202	<.001
Session	- .00417	.00137	-.0863	-.086	-3.035	9.214	.003

Analysis of Variance Summary Table

Source	SS	df	MS	F	p
Regression	.394	1	.394	9.21	.C03
Residuals	52.535	1229	.043		
Total	52.929	1230			

Standard error of estimate: .2068

Multiple R: .0863

R^2: .0074

Table 9

Feelings-of-Being-Understoood : Ten Sessions, Comparable Data/Analysis of Variance

SOURCE	SS	df	MS	F	p
Mean	1026.034	1	1026.034	1676.38	.000
Between Sessions	8.299	9	.922	1.51	.140
Within Sessions	722.222	1180	.612		
Total	1756.557	1190			

Table 10

Hierarchical Decomposition of the Independent Contribution of Session, Congruency, Agreement, and Feelings-of-Being-Understood to Accuracy (10 Sessions, Comparable Data)

VARIABLES ADDED	CUMULATIVE R^2	R^2 CHANGE	B	STANDARD ERROR B	BETA	F	d.f.	p
Session	.00843		.00362	.00136	.07424	10.899	1182	$<.01$
Congruency	.01567	.00723	-.00551	.01052	-.02085	9.347	1182	$<.01$
Agreement	.08327	.06760	-.07978	.00840	-.28937	87.395	1182	$<.01$
Feelings-of-Being Understood	.08565	.00238	.01845	.01052	.06869	3.077	1182	$<.05$
			.21532 (constant)					

Note: The measures of the dependent variable, accuracy, and independent variables, congruency, agreement and feelings-of-being-understood used in this analysis are the first described measures in Ch. III.C.2.b. (i.e. 1 vs. 2). An F test was used to determine whether the increment (change) in R^2 associated with each independent variable made a significant contribution to change in accuracy. R^2 change is the proportion of variance accounted for by each independent variable. The signs of B and (standardized) Beta values have been changed to reflect true positive or negative influences of the independent variables on Accuracy. N = 12

Table 11

Hierarchical Decomposition of the Independent Contribution of Congruency, Agreement, Feelings-of-Being-Understood, and Session to Accuracy (10 sessions, Comparable Data)

VARIABLES ADDED	CUMULATIVE R^2	R^2 CHANGE	B	STANDARD ERROR B	BETA	F	d.f.	p
Congruency	.00808		-.00551	.01052	-.02085	10.446	1182	<.01
Agreement	.07722	.06914	-.07978	.00840	-.28937	89.386	1182	<.01
Feelings-of-Being Understood	.08019	.00297	.01845	.01052	.06869	3.840	1182	<.05
Session	.08565	.00546	.00362 .21532 (constant)	.00136	.07424	7.059	1172	<.05

Note: See note for Table 10.

Table 12

Correlations Between Comparable Coorientation Data
(Regarding Valid Eriksonian Items) Gathered Over Ten Sessions

	Congruency	Agreement	Accuracy	FOBU
Congruency	1.000			
Agreement	.390**	1.000		
Accuracy	.057	.265**	1.000	
FOBU	.697**	.354**	.047	1.000

*p $\leq$.05
**p $\leq$.01

Note: Intercorrelations are for coorientation scores derived from the 12 members' agreement-disagreement with valid Eriksonian items (footnote 11) administered following sessions 1, 2, 4, 5, 7, 8, 10, 11, 13 and 14. A total of 114 items (average of 11.4 per session) were used in the ten sessions.

Table 13

Missing Data For The Coorientation Measures

	10 Sessions, Comparable Data (Total possible Observations for each variable = 1368)	14 Sessions, All Valid Data (Total possible Observations for each Variable = 2342)
Congruency	138	259
Agreement	60	114
Accuracy	138	259
FOBU	177	329

Note: Coorientation data (observations) were defined as "missing" when one or more of the ingredients necessary to calculate them (p. 9) were missing.

FOOTNOTES

1. Examples of "prescriptive" approaches include: the optimizing strategy (Young, 1966); the reflective thinking model (Dewey, 1910); satisficing (described in Janis and Mann, 1977); quasi-satisficing (Schwartz, 1970); "muddling through" or the incremental approach (Braybrooke and Lindblom, 1963); mixed-scanning (Etzioni, 1968); ideals system approach (Nadler, 1969); lateral thinking (DeBono, 1970); and Janis and Mann's (1977) seven criteria for evaluating the quality of decision-making and therefore avoiding unforseen consequences.

2. For example, Powles (1959); Appelbaum (1963); Johnson (1963); Gottlieb and Kramer (1965); Anthony (1967); Day (1967); Horwitz (1967); Dunphy (1968); Gibbard and Hartman (1974); Saravay (1978); Martin and Hill (1957); Schutz (1958); Kaplan and Roman (1963); Bion (1961); Bennis and Shepherd (1956); Stock and Thelen (1958); Stock and Lieberman (1962); Slater (1966); Davie (1971); and Boyd, Steeves and Rathert (1979).

3. O'Keefe (1971) used field methods to investigate the effect of amount and form of interpersonal communication between parent-child pairs on agreement, congruency and accuracy. His findings were inconclusive but encouraged further investigation. Ward (1968) and Wackman (1968) studied the effects of communication norms on different types of behavioral responses. Ward manipulated norms and examined the effect of "socio-oriented" (emphasis on deference to authority and keeping the peace) and "concept-oriented" (emphasis on argumentation and thinking for oneself) norm conditions on amounts of behaviors according to Bales' categories, and also on both public and private conformity to discrepant attitudes held by a confederate in high or low expert and high and low information conditions. Wackman (using field methods) identified adolescent "personality types" according to their socialization in the family (extent of emphasis on concept and/or socio-oriented norms) and predicted (and found) different kinds of reported responses (cognitive, emotional, behavioral) in a hypothetical role conflict situation. Studies providing evidence for relationships between communication behaviors as an independent variable and coorientation as a dependent variable include Chaffee and McLeod's (reported in Wackman, 1973) analysis of 15 minute discussions between 70 married couples according to Bales' system. They found that asking for others' orientations and opinions and giving one's own orientations were significantly related to increases in accuracy. Flanders (1967) found that certain ("indirect") teacher behaviors yielded high student test scores, indicating accuracy of teacher-student communication in "indirect" classrooms. Another experiment (Beatty, 1970), involving a feedback manipulation, showed greater increases in accuracy in an experimental group (feedback condition) than in the control group. Wackman (1973) suggests that behaviors related to increases in accuracy in the Chaffee-McLeod study mentioned above are those which attempt to elicit feedback in receivers. Studies of perceived congruency as an antecedent to communication (independent variable) have indicated that perceived congruency (expectation of agreement) is associated with information seeking and information sharing (Clarke,1971) and information seeking and information giving (Stamm and Pearce, 1971). Amidon and Gaimmatteo (1967) found that certain teacher communication behaviors significantly affected norm conditions (student participation) in the classroom. Finally, Newcomb (1961) did consecutive studies of two 15-week, 17-member groups of initially-unacquainted men living in a college dormatory. His primary goal was to learn how members' feelings or attraction for each other, members' attitudes on various issues, and congruency (perceived agreement),

actual agreement, and accuracy regarding members' feelings of attraction and attitudes interact or work together to affect "balance" (optimally, the perception of high mutual attraction and high agreement on mutually salient issues). A major finding of the study was that people will be attracted/not attracted to or accurate/inaccurate regarding others in ways that produce balance. If a person (A) is strongly attracted to another person (B), but they disagree regarding a mutually salient issue, A will either reduce his/her feelings of attraction for B or misperceive B's position on the issue.

4. It's interesting that accuracy increased in the only group where accuracy was related to member productivity and sensitivity.

5. In both years of his research, most of the issues members responded to tapped rather deep-set beliefs/values and would be unlikely to change much over 15 weeks where relatively little communication on each issue occurred. Also, while some measures of member attraction for others and attitudes on some issues (and miscellaneous personality measures) were taken each week, comparable measures of members' perceptions of each other were only taken two or three times in each group. In the first group, the data for most of the issues members responded to was later rejected as not particularly salient to most members. One outcome was that comparable time 1 - time 2 data for accuracy regarding issues could not be salvaged. Given these -- among other -- limitations, Newcomb found (as expected) that there was little change in member responses -- and therefore agreement -- regarding issues (first or second year) or values (second year) over time in either group. Agreement regarding feelings of attraction for members increased in both groups. Perceived agreement regarding attraction also generally increased over three measures (early, middle, and late acquaintance). Both actual and perceived agreement especially increased regarding members highly attractive to each respondent -- not surprising since mutual attraction and attraction for relevant others becomes increasingly salient and communicated over time between friends. For some reason, estimates of others' rank orderings of house members' attractiveness was only obtained at weeks one and five for the first group. Accuracy did generally increase from week one to week five. Changes in accuracy regarding attractiveness were not reported for the second group. However, accuracy regarding values increased from week one to fourteen. All in all, there appears to be nothing particularly surprising or revealing in Newcomb's reported data on change over time in the coorientation variables.

6. "Interpersonal perceptual congruency" was the relationship for a member between (a measure of) how-I-think-another-sees-me and those particular others' responses for that member on how-I-see-the-other-person. "Intrapersonal perceptual congruency" was the relationship for a member between how-I-see-myself and how-I-think-another-sees-me.

7. The Dynamics of Instructional Groups, Curriculum and Instruction 745, taught by Professor Robert D. Boyd.

8. The instructor's interpretations aimed to bring together observation and theory and sometimes analogy. Some of the comments were relatively straightforeward in descriptive sense--e.g. "There's a lot of dishonesty in this group"; or "If I were a member of this I wouldn't stand for what's going on right now." However, most were more obviously based in some area of psychoanalytic theory, often Bion (1961) or Slater (1968). The symbolism commonly used in such interpretations was typical of psychoanalytic group facilitators where <u>mother</u> or <u>child/baby</u> (depending on the context of the comment) symbolizes the group,

father stands for authority (usually the instructor), and brothers and sisters are the members. The interpretations were not provided on demand but rather at the instructor's discretion. Frequency varied from none to as many as ten in a session.

9. Trust vs. mistrust (0-1) -- Child learns to depend on the ultimate consistency and goodness of things and people, resulting in general feelings of faith in him/herself and optimism about reaching goals.

   Autonomy vs. shame and doubt (1½-2½) -- Child learns to make and act on free decisions. He/she can hold on or let go without self-destructive results because his/her firmness prevents excess dissonance.

   Initiative vs. guilt (3-5) -- Child can contemplate and initiate acts without powerful feelings of guilt because he/she has learned to "attack" and conquer without excess fear of failure or punishment. He/she becomes increasingly competent in planning/starting activities.

   Industry vs. inferiority (6-12) -- Child becomes aware that he/she can give to others (become a provider). He/she is ready to apply him/herself to given tasks and skills that result in feelings of adequacy, producing behaviors of completing tasks, and adjusting to the development of skills and work.

   Identity vs. role confusion (13-23) -- Adolescent/young adult can take on roles because he/she has skills which to apply to roles. This results in feelings of belongingness and produces behaviors of identification and joining.

   Intimacy vs. isolation (24-33) -- Individual is able to have intimate relationships because he/she can face the fear of ego loss in situations which call for self-abandon. This leads to feelings of warmth with other people and behaviors of falling in love, making close friends, sharing intimate thoughts, etc.

   Generativity vs. stagnation (34-55) -- Individual is able to take an interest in establishing and guiding the next generation, having expanded his/her interests through learning to "lose" him/herself in closeness to others. Resulting feelings of enrichment yield behaviors of taking responsibility for others, teaching, etc.

   Integrity vs. doubt and despair (56+) -- Individual has a belief in some world-order and its meaningfulness (due to a lifetime of ego integration). This result is a feeling of hope and behaviors reflecting calm acceptance of the triumphs and disappointments of life.

10. The valid (footnote 11) Eriksonian items members responded to and stages/concerns they tapped (as such concerns apply to a small group) are listed below. About 12-16 of the items (representative of all or most concerns) were administered each week.

    Trust vs. mistrust

    --I felt very safe and relaxed in the group today. (+)
    --I feel optimistic about the future of the group. (+)
    --There was a lot more trust at the end of the meeting today than at the beginning. (+)

--I didn't quite trust the group enough to say what was really on my mind. (-)
--I often tried to be careful about the words I used because I was afraid I might be misunderstood. (-)

Autonomy vs. shame and doubt

--I disagreed strongly with some group member(s) on one or more issues and I said so. (+)
--The group made one or more decisions on its own today. (+)
--I'm confused about what this group is supposed to do. (-)
--I didn't like some of the things that happened today but I didn't speak up and say so. (-)
--The discussion would have been better if we had developed a procedure and stuck by it. (-)
--The discussion needed more direction. (-)
--The discussion would have been easier if Prof. Boyd hadn't been in the room. (-)

Initiative vs. guilt

--I was an aggressive member of the group today. (+)
--I had a lot of influence over what the group discussed today. (+)
--I was satisfied with the way we organized the discussion. (+)
--I stayed silent when conflict arose among or between members. (-)
--When things went wrong in the group I looked to see where I was to blame. (-)
--The discussion would have been better with less rivalry among members. (-)

Industry vs. inferiority

--The group really worked hard today. (+)
--We got a lot accomplished today. (+)
--We stuck with one or more issues until they had been sufficiently discussed. (+)
--My contributions were used and appreciated by the group. (+)
--Today's discussion helped me better understand other groups I work with. (+)
--We gave up too quickly in our efforts to deal with the more important issues that arose. (-)
--We didn't do much today. (-)
--We spent more time talking about what we might do than actually doing anything. (-)

Identity vs. role confusion

--After today, I feel proud to be a member of this group. (+)
--I spoke up most often when the discussion touched on basic values and ideas which we held as persons. (+)
--Today I gained much insight into my own behavior and personality. (+)
--I felt confused about what my role should be in the group today. (-)
--My behavior must have shown the confusion I felt about my role in the group today. (-)
--We behaved more like 12 individuals than like a group. (-)

Intimacy vs. isolation

--The group members really tried hard to understand each other today. (+)
--There was a real feeling of warmth in the group during the last 15 minutes of today's discussion. (+)
--I feel satisfied that every group member was encouraged to express him/herself freely today. (+)
--I don't feel any closer to the group than when today's discussion began. (-)
--Today's discussion was very superficial. (-)
--I didn't feel close enough to the group today to share my personal thoughts and feelings. (-)

--At times I was concerned that one or more group members were being left out of the discussion. (-)
--I felt hurt when one or more of my contributions was ignored or misunderstood. (-)

Generativity vs. stagnation

--I was pleased today to see members of different age groups sharing each other's interests and concerns. (+)
--Today's session contributed to the personal growth I hope to gain from this course. (+)
--Today's session gave me insights that may help me to be a better parent or teacher. (+)
--Some of the older and younger group members just didn't seem able to communicate on certain issues. (-)
--I would probably have furthered my personal growth more today by staying home and studying.(-)

Integrity vs. doubt and despair

--There was a comfortable "sense of closure" at the end of today's session. (+)
--This has been a good group and I feel no regrets about our history. (+)
--After today, I wonder if it's possible for groups to solve problems rationally. (-)
--In some ways I wish we could start the group over and try to do a better job. (-)
--I feel some regret that our group hasn't accomplished more. (-)
--I don't feel good about the way the group ended today. (-)
--I don't really care what happens in this group anymore; I'm just going to endure it until the semester ends. (-)

11. The content of most of the Eriksonian items was taken from instruments that previously had been used to tap individual Eriksonian concerns and had been validated for that purpose (Boyd and Koskela, 1970; Davie, 1971; and White, 1976). Since the items borrowed from these instruments were reworded to reflect group concerns and some completely new items were used, a test of all the items' validity in reflecting Eriksonian issues was considered necessary. Accordingly, all items used throughout the semester were given (in a randomly assorted list) to three experts in Erikson's theory. (The three experts were graduate students who had previously coded group sessions and/or individual behaviors using Eriksonian instruments and who had also taken several courses in psychological theory -- including a separate course on Erikson.) The experts independently coded the stage and resolution status (positive or negative) of each item on the list. Of the 75 items, 62 (83 percent) were coded identically by all three coders. However, nine of the 63 items were considered "weak" or "ambiguous" representatives of their intended stages. Therefore, these nine items were eliminated and a total of 53 items were considered valid for hypothesis testing (footnote 10).

12. In addition to test-retest reliability, three rough validity tests were carried out. First, before analyzing the coorientation data, the author viewed videotapes of all group meetings and estimated relative levels (high, medium or low) for each of the four coorientation variables for each session. Comparisons were made between these informal ratings and rankings for mean coorientation for the 15 sessions. Second, members' coorientation scores were compared with their responses to certain questionnaire items that had been administered (along with coorientation items) following 5 of the 15 sessions. These items aimed to tap variables likely to be associated with the coorientation variables -- such as perceived similarity to other members and perceived agreement and accuracy regarding the relative importance of overt topics discussed. The third validity test involved correlating the measures of the four coorientation variables described in this paper with mathematically different -- and somewhat less precise -- measures of the same variables. All three tests generally supported the validity of the coorientation variables.

13. This is undoubtedly because the chances of other members remarking (on six point scales) the exact same categories as a member is lower than remarking categories in the same general range (to yield high reliability for means) or strongly agreeing for both tests and retests.

14. Cohen and Cohen (1975) explain how analysis of variance trend tests produce the same results as those obtained via multiple regression using orthogonal polynomial coding. However, they criticize the usual analysis of variance requirement that there be equal intervals between levels of the independent variable and equal numbers of observations at each level. The computer program used in this research -- Statjob's Oneway 2: One-way Analysis of Variance (1975) -- uses special computation procedures in generating orthogonal polynomials (described by Kirk, 1968) to correct for unequal intervals between levels of the independent variable; and it also corrects for unequal numbers of cases per level. Since analysis of variance will also test differences between all combinations of means at different levels of the independent variable, there appeared to be little or no advantage to using regression over analysis of variance in an initial examination of coorientation trends.

15. In these and all other analyses reported in this chapter, missing data were ignored.

16. The cubic, quartic and quintic functions were tested more out of curiosity than an expectation that they could contribute to an understanding of the data. Cohen and Cohen (1975) argue that the empirical fitting of polynomials much above the cubic function is unparsimonious and unlikely to enhance scientific understanding -- especially in the "soft" behavioral sciences where they feel one or two functions will usually suffice. So while the author anticipated possible significance of a quartic or quintic trend, she did not expect to include these polynomials in prediction equations.

17. Statjob program Regan3, a variation of Regan2: Multiple Linear Regression Analysis (1971), was used for these analyses.

18. Although a quartic function was also significant in the trend test, the plotted means do not suggest that a prediction equation would be any more useful with the addition of this function. As Cohen and Cohen (1975, p. 214) point out, there's little to be gained by "fitting each squiggle of the curve due to random sampling or measurement error." Kerlinger and Pedhazer (1973, p. 212) agree, noting that "the higher the degree of the polynomial, the more it is affected by the unreliability of the measure involved and the harder it is to interpret."

19. Given such error in the data, the author decided that a quadratic-level curve might be a safer description of the trend. Figure 4 shows congruency as simply increasing over time in a slight quadratic fashion.

20. In other words, interpretations reflecting the rest of the group's boredom with or lack of commitment to the task.

21. Congruency, feelings-of-being-understood and accuracy share the ingredient "perception of the rest of the group marking '5' or '6'" (strongly agreeing with the statement); however, agreement and accuracy share none of the ingredients directly used to calculate coorientation scores (see p.9).

22. Pavitt and Capella's ideas were grounded in a number of assumptions generated by their literature review. Their assumptions include the following: Liking of dyad partner is inversely related to perceived disagreement; Accuracy is an inverted U function of liking (i.e. extremes of both like and dislike are related to low accuracy); Increased communication--and information-seeking, specifically, are positively related to liking; Involvement with discussion issues is inversely related to accuracy in judging another's

views on them; If disagreement is perceived, involvement with an issue is inversely related to confidence in judgements regarding one's partner's views; If disagreement is perceived, utility in knowing one's partner's views (if high) is related to increased information-seeking and increased accuracy; If there is utility in knowing one's partner's views, low confidence in judgments regarding discussion issues is related to greater information-seeking and increased accuracy; Actual agreement and accuracy increase with time spent communicating.

23. These hypotheses accounted for expected differences in utility in knowing one's partner's views; in interactions among utility, confidence in judgments and level of perceived disagreement; and/or in the need for persuasive messages. For example, for the "within dyad" task, utility in knowing one's partner's views was assumed always high, and so perceived disagreement was expected to be related to lowered confidence in judgments regarding own views on discussion issues and therefore increased information-seeking and accuracy. [Pavitt and Capella's hypotheses were the same for outside dyad tasks as for inside dyad tasks under conditions of low and intermediate perceived disagreement. Under conditions of high perceived disagreement, the utility of knowing their partner's views was expected to drop off, resulting in greater confidence in own judgments, less information-seeking and lower accuracy. The consensus task was viewed as somewhat more complex since task success hinges on the ability of partners to compromise -- and the compromise process depends on persuasive messages sent by one or both dyad partners. Pavitt and Capella hypothesized that decreases in perceived disagreement should signal the utility of persuasive messages and result in increased communication and ultimate agreement and accuracy (consensus), especially under conditions of high confidence in own judgments. On the other hand, increases in perceived disagreement should lead to decreases in communication (persuasive attempts) and lower consensus, especially under conditions of low confidence.]

24. Stamm and Pearce (1971) found that expectations of agreement that were confirmed led to more communication, primarily in the form of questions. But expectations of agreement that were disconfirmed led to more comments.

(AUTHOR HAS INCLUDED COMMENTARY AND APPENDIX FROM HER DISSERTATION AS ADDITIONAL INFORMATION TO ACCOMPANY THE ICA PAPER.)

2. The Coorientation Measures

a. The coorientation instrument: history; format; content; and use

The instrument to generate coorientation scores for group members following meetings underwent major changes while the proposal for this

project was being developed. The original plan was to present group members immediately following each meeting with a number of topics that had been discussed during the meeting, and to have them rank the importance of the topics in three ways: for themselves; for their perception of the rest of the group; and according to how they thought the rest of the group perceived them as ranking the topics. However, extensive pretesting on two graduate seminar groups during the summer 1977 proved this plan (and several variations) to be extremely difficult to implement.

The most serious problem was that no satisfactory method could be found for selecting topics to have members rank. Regardless of operational definition used for "topic" (e.g., any issue, idea, or object discussed from five to fifteen minutes with three-fourths of the members contributing), observer-selected topics tended either to be so minor that they were obviously "unimportant", or to be subtopics of a major group concern. Members expressed extreme difficulty in ranking related subtopics that they felt were of essentially equal importance. And this ambiguity was corroborated in low test-retest reliability scores. An attempt was made to have members make their own lists of topics that they could recall discussing and then rank them. But differences in descriptions/wordings of topics made it difficult to even determine the extent to which members listed the same topics, and even more so to compare rankings.

Since discussion topics are not the only thing that group members can potentially coorient on, the author developed a different procedure. Some informal pretesting indicated that group members had little trouble responding to this new method, and it was therefore used in the final fall 1977 data gathering.

Specifically, members were presented with a series of statements following meetings and were asked to rate their extent of agreement-disagreement with each statement in three ways: (1) for themselves; (2) according to how they felt the rest of the group was rating the statement; and (3) according to how they felt the rest of the group perceived them as rating the statement.

The statements presented to members aimed to reflect concerns in each of Erikson's eight ego-identity stages as such concerns are dealt with in the self-analytic group setting. (As discussed in Ch. II.A.5.b, the eight, bipolar Eriksonian concerns have been found to be <u>always</u> relevant in small groups, though one or two concerns will be especially relevant at any given time in a group's development.)

The content of most of the statements was taken from well-validated Eriksonian instruments developed and/or described and used by Boyd and Koskela (1970), Davie (1971), and White (1976). Also, all statements used in data analyses survived an additional test of their validity in reflecting Eriksonian concerns (see Ch. IV.C.3.b for a further discussion of the validity of the Eriksonian statements). It should be noted, however, that for the second set of research

hypotheses, the specific content that group members responded to was not so important as (1) that it was similar/comparable from week to week and (2) that they could respond to it meaningfully and could therefore produce reliable and valid coorientation scores that could be tested for predicted changes.

The number of statements presented to the group members each week was reduced considerably after the first two sessions. It had become apparent that the members had trouble responding to more than 16 statements (i.e. giving more than 3 times 16 or 48 responses) immediately following their two and one-half hour meetings. The author therefore selected one or two statements representative of each stage for a total of between 12 and 16 statements. Thus, the weekly instrument was not too long, was not worded identically from week to week, and contained varied content that remained similar (representative of the eight ego-identity concerns) from week to week.

The 12-16 statements used each week were selected to include: at least one representative of each Eriksonian stage; about half positively and half negatively worded statements; only a very few, if any, statements that had been used the preceding week; and no statements likely to be irrelevant to the group at that particular time (e.g. some stage 8/integrity statements -- see Appendix VIII-- would clearly not be relevant during meetings early in the semester).

Figure 8 gives some examples of Eriksonian items used on the coorientation instrument. (See Appendix VIII for items used on all instruments for sessions 1-15.)

	DISAGREE					AGREE	
Today's discussion was very superficial.	(1)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
I was an aggressive member of the group today.	(2)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
We spent more time talking about what we might do than actually doing anything.	(3)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
I felt very safe and relaxed in the group today.	(4)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%
We behaved more like 12 individuals than like a group.	(5)						
	a.						
	b.						
	0%	5-10%	15-25%	30-50%	55-75%	80-95%	100%

Figure 8. Examples of Eriksonian items on coorientation instruments presented to fall 1977 group members following weekly meetings. See Appendix VIII for the stage-specific Eriksonian concerns reflected by these and all other items used. The directions accompanying each weekly instrument were as follows:

Listed below are a number of statements that might be used to describe today's group discussion and/or your participation. Next to each statement, indicate the extent to which you personally agree or disagree.

Beneath each statement and next to the letter "a" indicate approximately what proportion of the rest of the group (excluding yourself) you think agreed strongly with the statement, i.e. marked one of the two spaces at the right end of the scale.

Beneath each statement and next to the letter "b" indicate approximately what proportion of the rest of the group you think perceive you as agreeing strongly with each statement, i.e. as marking one of the two spaces at the right end of the scale.

DO NOT GUESS. In other words, if a statement does not make sense to you in light of today's discussion, skip it and go on to the next statement. If you feel you cannot respond to part "a" or part "b" for a statement, leave it blank.

Group members were instructed both verbally and in writing to respond according to how they felt about each statement (and their perceptions of the rest of the group regarding each statement) as that statement described the preceding discussion and/or the member's participation, i.e. members were CLEARLY instructed to respond "in light of today's discussion." The author felt that the strong emphasis on responding according to what had happened in the immediately preceding discussion would help minimize the chances of members responding to some items according to their own personalities,[10] to prior experience with the test, and/or to knowledge of how other members had previously

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[10] The form of the coorientation statements appears, on the surface, to vary from personality-oriented statements to group-oriented statements. However, the author believes that the directions accompanying the coorientation instrument made both types of statements similarly reflective of members' perceptions as they were influenced by the group at a given time. Also, it can be easily argued that all of the statements, regardless of wording, can be influenced to some degree by personality constants in responding members.

For example, members were instructed both verbally and in writing to respond to the following two autonomy-related (Eriksonian stage II) statements as they describe "today's discussion and/or your participation", i.e. the respond "in light of today's discussion".

1. I'm confused about what this group is supposed to do.
2. The discussion would have been better if we had developed a procedure and stuck by it.

While it may be argued that a person with a consistent tendency to be confused may have responded to statement number 1 more in terms of his/her own personality than his/her response to the group, it is felt that the directions were explicit enough so that the influence of personality should not have inhibited differences in member responses over time "in light of today's discussion". (An examination of individual member responses for specific items over time has, in fact, supported this belief). Also, it should be pointed out that while statement number 2 above seems aimed more specifically at an issue concerning "today's discussion" than statement number 1, it seems that an individual member with a consistent need for clear procedure might have been just as influenced by his/her personality in responding to statement number 1.

responded to the items.[11] Group members were also instructed not to guess. That is, if an item did not make sense to a member in light of the preceding discussion (either for him/herself, the group and/or the group's perception of him/her), the member was instructed to skip the item and go on to the next one.

As indicated in Figure 8 , agreement-disagreement ratings for self were on a six-point scale. The six-point scale was used as an additional reminder for members not to guess. (It was hoped that if a member wanted to mark a neutral category but was forced to choose one side or the other, he/she would reconsider the relevance of the statement.)

To indicate perceptions and "metaperceptions" of the rest of the group's ratings, each member was asked to mark what proportion of the rest of the group he/she perceived as giving a "5" or "6" agreement-disagreement rating (strong agreement), and what proportion he/she thought perceived him/her as rating the statement "5" or "6" (see Figure 8). This method was chosen over having members estimate "average" group ratings because of serious difficulties pretest subject's expressed in attempting to reify or view the group or the "rest of the group" as an average.

b. The coorientation measures

The author would have preferred using Pearson correlation and partial correlation to determine coorientation measures. Pearson

[11] See Ch. IV.C.

APPENDIX VIII

ITEMS USED IN TIME TRENDS ANALYSES

(COMPARABLE DATA OVER TEN SESSIONS -- UNDERLINED:
AND ALL DATA)

I. TRUST	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. I felt very safe and relaxed in the group today. (+)			24	8	18	1	12	10	2	5	5	11		4	4	6
2. I feel optimistic about the future of the group. (+)		31	8		10		7	4	12							
3. There was a lot more trust at the end of the meeting today than at the beginning. (+)	20	20	5											13		
4. I didn't quite trust the group enough to say what was really on my mind. (-)											9		1			
5. I often tried to be careful about the words I used because I was afraid I might be misunderstood. (-)												1				

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II. AUTONOMY	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. I disagree strongly with some group member(s) on one or more issues and I said so. (+)	16	16			14		10	6	14						13	
2. The group made one or more decisions on its own today. (+)											2	3	4	5		
3. I'm confused about what this group is supposed to do. (-)		41	2							11			8		11	
4. I didn't like some of the things that happened today but I didn't speak up and say so. (-)		32														
5. The discussion would have been better if we had developed a procedure and stuck by it. (-)		47												7		
6. The discussion need more direction. (-)						10	3									16
7. Prof. Boyd is probably angry at us for not making better progress weak. (-)	21	21														
8. The discussion would have been easier if Prof. Boyd hadn't been in the room. (-)				7											8*	
9. Prof. Boyd is manipulating the group weak. (-)	17	17	6													

*Item was administered but inadvertently omitted from true trends analyses.

III. INITIATIVE

	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. I was an aggressive member of the group today. (+)	7	7	4	5							3		2			4
2. I had a lot of influence over what the group discussed today. (+)			16		1	5	4					2			5	
3. I was satisfied with the way we organized the discussion. (+)	5	5	12		7			7	15						15	
4. I stayed silent when conflict arose among or between members. (-)		27	9		23	2					8	15				11
5. When things went wrong in the group I looked to see where I was to blame. (-)	10	10								12				10		
6. The discussion would have been better with less rivalry among members. (-)		37		2												

IV. INDUSTRY

	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. The group really worked hard today. (+)	4	4			16		11	8						11		15
2. We got a lot accomplished today. (+)			11			9			16			14				
3. We stuck with one or more issues until they had been sufficiently discussed. (+)	23	23	3	13	12					1	1			3		
4. My contributions were used and appreciated by the group. (+)	18	18			21	11	14	12	4						17	
5. Today's discussion helped me better understand other groups I work with. (+)	1	1	19	7	8		6							8		2
6. I learned a lot during today's discussion. (+)		42														
7. We gave up too quickly in our efforts to deal with the more important issues that arose. (-)	9	9	18							10	11	6	5		3	
8. I didn't learn much today. (-)	6	6												12		
9. We spent more time talking about what we might do than actually doing anything. (-)	12	12														

V. IDENTITY	1	1.5	2	3	4	5	7	7.7	8	9	10	11	12	13	14	15
1. After today, I feel proud to be a member of this group. (+)	24						16	16	8		14	12			18	
2. I spoke up most often when the discussion touched on basic values and ideas which we held as persons.	14	14		6	4										9	
3. Today I gained much insight into my own behavior and personality. (+ weak)	8	8	20		9	12		11	3	8				15		
4. I felt confused about what my role should be in the group today. (-)						14		9	1					2		8
5. My behavior must have shown the confusion I felt about my role in the group. (-)		48														
6. We behaved more like 12 individuals than like a group. (-)	13	13	10		3			3	11		16				2	

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VI. INTIMACY

	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. The group members really tried hard to understand each other today. (+)												5		9	16	
2. There was a real feeling of warmth in the group during the last 15 minutes of today's discussion. (+)		36		1		4	1	2	10		10			1		12
3. I feel satisfied that every group member was encouraged to express himself/herself freely today. (+)						24					13	10			14*	17
4. I don't feel any closer to the group than when today's discussion began. (-)	22	22	17		15	8				9	15				1	1
5. Today's discussion was very superficial. (-)	15	15	22	10	5			5	13					14		
6. During much of today's discussion I felt we were talking at each other vs. with each other. (-)												13				
7. I didn't feel close enough to the group today to share my personal thoughts and feelings. (-)	2	2	13				13									
8. At times I was concerned that one or more group members were being left out of the discussion. (-)		39			19			13	5	6	6				7	
9. I felt hurt when one or more of my contributions was ignored or misunderstood. (-)	3	3			6											

*14 - Item was administered but inadvertently omitted from data set for time trends analyses.

VII. GENERATIVITY

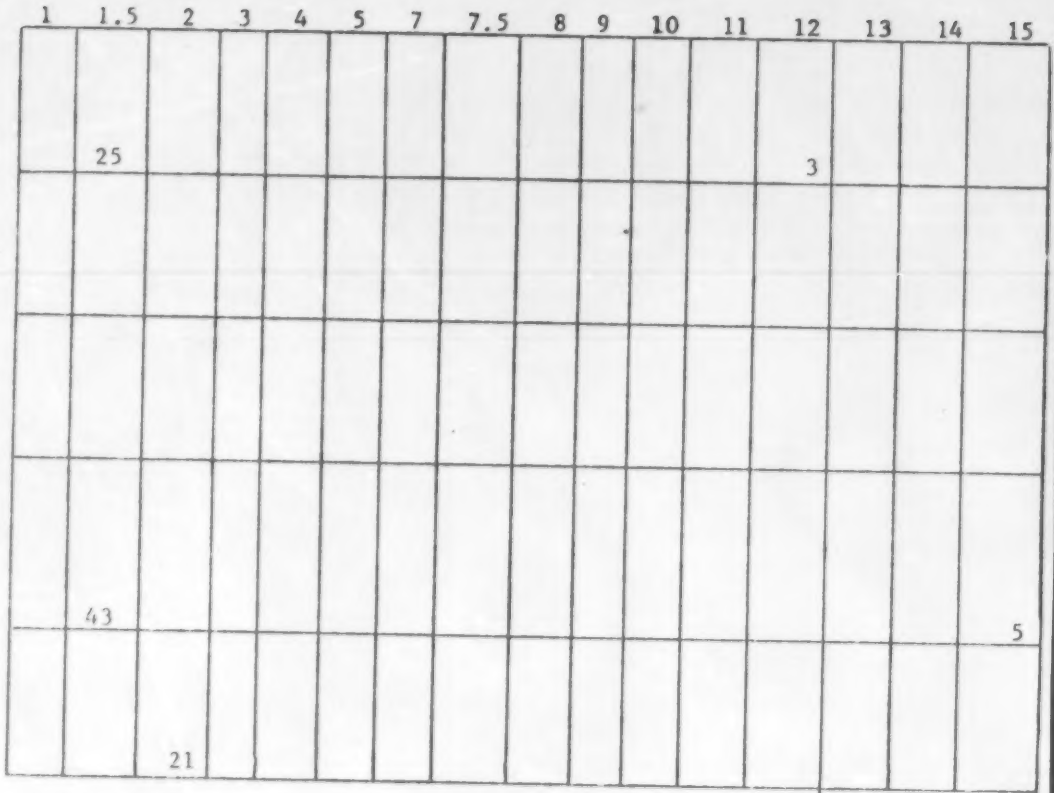
1. I was pleased today to see members of different age groups sharing each other's interests and concerns. (+)

2. Today's session contributed to the personal growth I hope to gain from this course. (+, never used)

3. Today's session gave me insights that may help me be a better parent or teacher. (+, never used)

4. Some of the older and younger group members just didn't seem able to communicate on certain issues. (-)

5. I would probably have furthered my personal growth more today by staying home and studying. (-)



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VIII.

	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
1. There was a comfortable "sense of closure" at the end of today's (or this final) session. (+)																13
2. This has been a good group and I feel no regrets about our history. (+)												7	6			
3. After today, I wonder if it's possible for groups to solve problems rationally. (-)		46	1		13	6	9	15	7					6		10
4. The problems I've seen in this group make me doubt whether people collectively can solve the problems facing society. (-)															10	
5. I'm disappointed with the overall accomplishments of this group. (-)															12	
6. In some ways I wish we could start the group over and try to do a better job. (-)																7
7. I feel strong regret that our group hasn't accomplished more. (-)															6	
8. I don't feel good about the way the group ended today. (-)																3

VIII. (continued)

	1	1.5	2	3	4	5	7	7.5	8	9	10	11	12	13	14	15
9. I don't really care what happens in this group anymore; I'm just going to endure it until the semester ends. (-)												4				
10. I'm beginning to worry that the semester will end and we won't have made any real progress. (- weak)				14												
11. Compared to other groups, I suspect our group isn't very well. (- weak)												16				

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